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PEDIATRICS

A SEMI-MONTHLY JOURNAL

DEVOTED TO THE STUDY OF

DISEASE IN INFANTS AND CHILDREN

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PEDIATRICS

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No. 1.

ORIGINAL ARTICLES

THE TREATMENT OF CLUB-FOOT.*

By R. W. MURRAY, F.R.C.S.,

Surgeon, Liverpool Infirmary for Children.

SO much has been written about the treatment of congenital club-foot, and so many different methods of operating have from time to time been advocated, and the various mechanical appliances for straightening these crooked feet are so numerous, that I think it will severely tax man's ingenuity to describe any really new method of treatment for the cure of this deformity. I certainly have no intention of attempting such a task, but wish to direct your attention for a few moments to certain methods of treatment I usually adopt, and to show you some illustrations from photographs of children taken before and after treatment. I will confine my remarks to the treatment of the most common variety of congenital club-foot—namely, talipes equino-varus, and will, in the first place, consider this deformity as it occurs in infants and subsequently in older children.

Given, then, a case of club-foot in an infant, I take it

* Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.



R. H., aged one week. Before operation, which consisted of subcutaneous division of all resisting structures on inner border of foot down to and including the astragalo-scapoid capsules, and then division of the tendo Achilles.



R. H., aged $3\frac{1}{2}$ years.



C. B., aged two weeks. Before Operation.



C. B., Six months later.

we are all agreed that the sooner treatment is commenced the better.

In cases where the deformity is only slight, manipulation alone may suffice, or manipulation and splints, after division of the tendo Achilles. But in the more severe cases, examples of which I will show you presently, I almost invariably perform the following operation: The infant being under chloroform, I pass a tenotomy knife immediately in front of the internal malleolus and divide subcutaneously the plantar fascia and all the resisting structures on the inner border of the foot down to and including the astragalo-scapoid capsule.

Mr. R. W. Parker long ago pointed out the important part this capsule plays in maintaining the deformity, and I have by dissection verified the truth of his observations and clinically demonstrated their value.

After thus dividing all resisting structures, I over-correct the varus deformity and then divide the tendo Achilles. A cyanide gauze and wood-wool dressing is applied at the points of puncture, the foot and leg from the toes to below the knee covered with a domet bandage, and the foot fixed in the corrected position with a plaster of Paris bandage; the foot, of course, being held in the corrected position until the plaster sets. On the fourth or fifth day the dressings are removed, the foot dusted with zinc and starch powder, and the plaster reapplied over a domet bandage only. I usually change the plaster of Paris about once in three weeks, and in favorable cases dispense with plaster or splints of any kind at the end of two months, relying then upon constant manipulations by the nurse or mother and occasionally by myself to keep the foot straight. If at any time there should be a tendency to inversion of the foot I reapply the plaster of Paris bandage.

I have, during the last eight years, thus operated upon 117 patients, and have every reason to be well satisfied with the results.

We will now consider the case of children who have already learned to walk and whose club-feet have either not been treated or in whom the treatment has not been successful. I believe that in the majority of such cases a more extensive operation than the one I have just described is necessary, for



Cast of Feet of A. P. Before Operation.



A. P., aged 9½ years. Tarsectomy in both feet, three and four years ago.



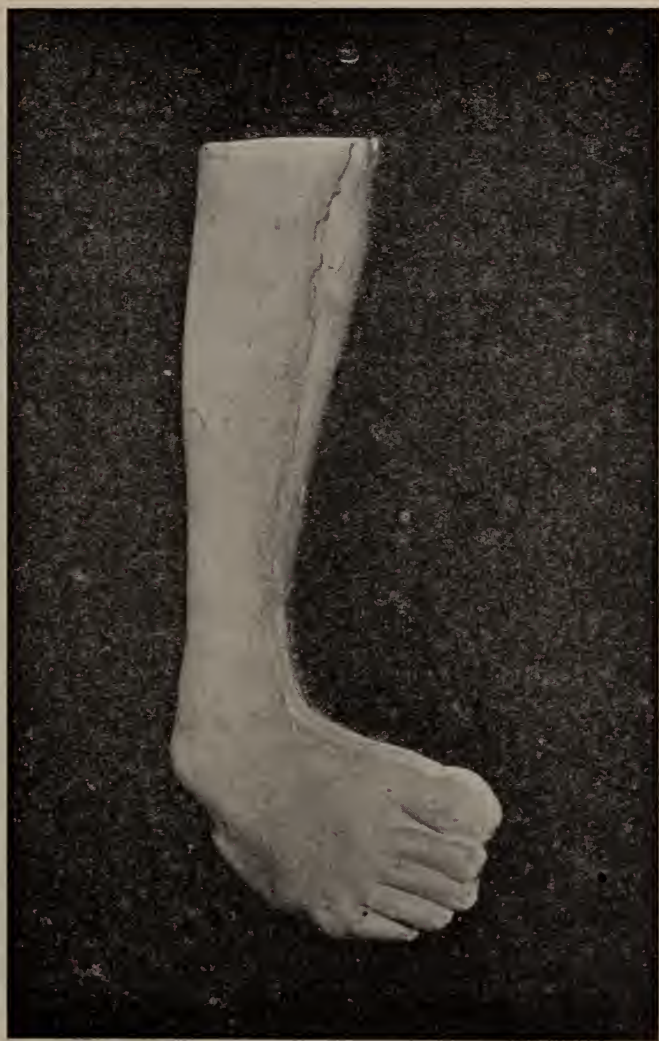
A. P., aged 9½ years, Tarsectomy in both feet for Double Congenital Club-foot, three and four years ago.

here, besides the ligaments and plantar fascia, the altered bones (more especially the astragalus) play an important part in maintaining the deformity. Other things being equal the older the child the greater the importance of the bony deformity. In many cases when the club-foot has not been of a severe type I have obtained good results by performing the same operation I practice on infants. But when a child has reached three or four years of age and the deformity is of a severe type I am convinced that something more than the division of tendons and ligament is necessary in order to get a foot of this kind straight and to keep it straight.

The methods of operating most commonly practiced in cases of this nature are wrenching, Phelps's operation, excision of the astragalus, and the removal of a wedge of bone from the outer part of the foot. My objections to wrenching are that it has to be repeated from time to time, the after-pain is severe, and I believe the tendency to relapse considerable. The necessary frequent repetition of the operation is an obvious disadvantage when patients come from a distance. However, I do not speak from practical experience, and it is only fair to say that my friend, Mr. Robert Jones, of Liverpool, who has had an exceptionally large experience of wrenching, is a strong advocate for this method. Phelps's operation I have never done. It consists in a free division of all resisting structures on the inner border of the foot including the skin, and going right down to the bones, the foot being then straightened. It seems to me that as a result of such a procedure one of two things must happen: either the wide gap made on the inner side of the foot, subsequently filled up by cicatricial tissue, will contract, and so cause a recurrence of the deformity, or if the foot remains straight, it will be weak and flail-like.

The removal of the astragalus would, on pathological grounds, appear to be the most logical course to adopt, for the astragalus has been shown to be the bone chiefly at fault, and Mr. Lund, of Manchester, and other surgeons speak well of this operation. But, from a purely mechanical point of view, the straightening of the curved foot, and the keeping of it straight by the removal of a wedge of bone from the convexity of the foot, appeals to me more strongly still.

I have performed this wedge operation for club-foot fifty-



Cast of Foot, in the case of R. D.



R. D., aged 7 years. Tarsectomy.



R. D., aged 7 years. Tarsotomy (wedge operation) for Congenital Talipes Equino-varus of Right Foot.

two times on forty-two patients. It is unnecessary for me to describe it in detail, for it is practically the same operation as first performed by Mr. Davis Colley in 1875.

I wish, however, to mention one or two points:

In the first place it is very important before operating to thoroughly cleanse the child's foot; more especially is this the case in hospital patients, for the children are accustomed to walk on the part of the foot that will be operated upon, and the skin here is often exceptionally thick and dirty, and in order to obtain a good result, the wound must heal by first intention.

A point I would especially emphasize is that the wedge of bone removed should be sufficiently large to allow of the foot being not only easily straightened but of the varus deformity being slightly over-corrected, for I feel convinced, not only from the result of my own experience, but from what I have seen of the work of others, that many of the failures resulting from this operation have been due to the insufficient removal of bone.

The varus deformity being corrected, I then divide the tendo Achilles. The tarsectomy wound is completely closed and the foot fixed on a back-splint with a footpiece, before removing the tourniquet.

On the seventh or tenth day the dressings are removed, the foot fixed in plaster of Paris, and the child sent home. A fortnight later the plaster is taken off, and the stitches removed, and the plaster reapplied. Two or three months after the operation the child is encouraged to walk in the plaster splint, and subsequently in ordinary boots.

I will now show you some photographs of patients taken before and after operation so that you may be able to judge of the results obtained. I have no desire to overstate my case for tarsectomy. That I have occasionally failed to obtain good results, more especially in my earlier cases, I candidly confess; and these failures were, without exception, due to one of two causes, either the wounds suppurated or I did not remove a sufficiently large wedge of bone.

In conclusion, gentlemen, I wish it to be clearly understood that I do not for one moment suppose that no good result



H. R., aged 14 years. Tarsectomy (wedge operation) when 7 years of age for
Congenital Talipes Equino-varus of Left Foot.



H. R., aged 14 years. Tarsectomy (wedge operation) when 7 years of age for Congenital Talipes Equino-varus of Left Foot.



H. R., aged 14⁷ years. Tarsectomy (wedge operation) when 7 years of age for Congenital Talipes Equino-varus of Left Foot.

can be obtained in bad cases of club-foot but by tarsectomy, at the same time I may perhaps be pardoned for thinking that when the deformity is severe no other operation can produce better results, both in respect to the duration of treatment, and as regards the subsequent appearance and utility of the foot.



ON THE OCCURRENCE OF A PAD ON THE
DORSUM OF THE FOOT IN RICKETS.*

By A. H. TUBBY, M.S., Lond. F.R.C.S., Eng.

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National Orthopedic and Evelina Hospitals.

IN the course of examining a large number of rickety children I was much struck by a peculiar appearance on the dorsum of the foot, and occasionally of the hand, but more often seen on the foot. I believe that this appearance has not hitherto been described. It was well known that in infants the dorsum of the foot is somewhat prominent and the soft tissues are fuller, but the appearance and feel of this part are totally different in healthy and rickety children. In the latter the soft tissues are decidedly thicker than in healthy children at this spot, and the swelling may be a flattened elevation or dome-like. Its color is that often seen in the skin elsewhere in rickets, and may be compared to that which would be produced by the injection of white wax, slightly tinted to a yellowish shade, beneath the skin, so as to give it a distinct tint and a semi-transparent look.

As to the consistency of the swelling, if in a healthy child the skin of the dorsum of the foot be pinched up between the fingers, it can be moved independently of the subcutaneous tissue; but in many rickety children skin and subcutaneous tissue are quite inseparable, and only a more or less thick fold composed of both can be made. It appears in many cases as if solid edema were present in the skin and subcutaneous tissue.

The pad, however, is not due entirely to changes in the subcutaneous tissue, but in some cases originates in swelling and thickening in the neighborhood of the epiphyses of the metatarsal bones; hence the pad is more frequently seen rather towards the anterior than the posterior part of the dorsum. When the bones are so affected, distinct beading may be felt

* Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.

about the epiphysial lines, and doubtless the perichondrium and periosteum are thickened as well. But to return for a moment to the consistency of the swelling. In early cases of rickets it is often semi-fluid. In cases of a few months' duration it is semi-solid, and in those of more than a year's duration it is hard and resistant.

I have tabulated 100 cases of rickets, but it is somewhat difficult to fix the date of onset of the attack, so it has been customary to ask the mother the following questions: When did the child's head begin to sweat at night persistently? When did he cry as if he were tender all over? When did he appear to be weak in his back and to go off his legs? When did the motions become evil-smelling and the abdomen to swell? By carefully noting the answers to these questions—some, of course, being in the negative—it has been possible to fix the date of the onset of the attack with some degree of accuracy. Taking 100 tabulated cases of rickets, 86 had dorsal pads and 14 none. The 86 have been divided into three classes.

(a) Those children in whom the pad was marked, but was semi-fluid, and no affections of the bones could be felt. Of the 86, 20 cases came under this category, the average age being 17 months and the duration of the rachitic attack 2 months. This statement bears out another observation, namely, that before the signs of rickets are seen or felt in the bones, the skin and subcutaneous tissues generally are affected, being puffy and of a tallow-candle appearance.

(b) Those in whom the pad is well marked, nearly dome-shaped, and solidly edematous to the touch. Of the 86 cases, 49 presented this appearance; the average age was about 27 months, and the average duration of the attack was at $11\frac{3}{4}$ months.

(c) Those in whom the thickening was mainly bony, the swelling being of a firm, hard, resistant character, and beaded. Of the 86 cases, 17 came into this category, their average being 4 years, and the duration of the disease 27 months.

Although only 100 cases have been tabulated, yet a very large number of other cases have been examined and have

appeared to me to bear out the preceding observations, and to indicate that if cases be watched over a long period the pad goes through three stages, namely, semi-fluid and confined to soft-tissues; semi-solid with some implication of the bones; and firm, resistant, and irregular, due entirely to the fact that the bone lesion is the last to disappear.

In conclusion I would then advance the following points for criticism:

1.—In a large proportion of cases of rickets the feet show definite dorsal pads, and in a smaller proportion of cases the same appearance is seen on the backs of the hands.

2.—This pad is of varying consistency and origin.

3.—If the disease be of recent duration—that is, two to six months—the thickening is subcutaneous and is semi-fluid.

4.—If rickets have existed from six to eighteen months, the pad is best marked, and is made up of thickened subcutaneous tissue and periosteum and overgrown epiphyses.

5.—At a period of eighteen to thirty-six months after the onset of the disease, the subcutaneous pad disappears concurrently with the general flabbiness and undue pallor of the skin, and leave the bony changes well-apparent to the touch.

DISLOCATION OF THE HIP JOINT ARISING IN CONNECTION WITH ACUTE FEVERS.*

By H. STANSFIELD COLLIER, F.R.C.S.,

Surgeon to Out-patients at St. Mary's Hospital, and at the Paddington Green Children's Hospital; Joint Teacher of Practical Surgery at St. Mary's Hospital Medical School.

IT will, perhaps, be best to introduce this small paper with a short account of the two cases to which my experience is limited.

Case I.—Scarlet Fever: Suppuration either in or near to the right hip joint; no evidence of bone disease; dislocation of right femur upon dorsum ilii; extensive myotomy and reduction after six months; recovery with ankylosis in position of slight flexion.

For the notes of the case I am indebted to my clerk, Mr. W. A. Trumper.

D. R., aged 13 years, was admitted to St. Mary's Hospital, June 16, 1897. He had been a healthy boy until six months previously, when he was seized with scarlet fever, for which he was admitted to a suburban isolation hospital. From notes kindly sent from this hospital it was learned that the illness had been very severe, and that there had been much ulceration of the throat, dacryocystitis, and double median otitis; that about the seventh day of the illness there was great pain in the right hip region, and the temperature, which had fallen somewhat, rose to 104° ; the boy also complained of pain in the left leg and the left shoulder. Two abscesses showed themselves, one in the outer part of Scarpa's triangle of the right side, and the other immediately behind the right trochanter major. These were incised. The abscess in Scarpa's triangle soon healed, but that behind the trochanter did not cease to discharge until nearly five months had passed. No bone disease was discovered.

Condition Upon Admission to St. Mary's Hospital.—A well-grown boy, much emaciated. Signs of dislocation of the

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right femoral head are well marked. The thigh is flexed to a right angle and cannot be extended. There is much adduction and inversion. The balls of the toes can reach the ground on standing only when the body is much bent forward. The top of the trochanter is two inches above Nélaton's line. The head of the femur can be easily made out through the much wasted muscles. It lies upon the dorsum ilii and feels natural in shape and size. There is movement of the limb, through a very limited range, and this is unattended by bony grating. There is no pain. The flexor group of muscles, the ilio tibial band, and the adductor group of muscles are obviously taut. The patient was put to bed, and a weight extension apparatus was applied to the right thigh.

On June 30th I divided, subcutaneously and very freely, the adductor muscles close to their origins, and made manipulations for reduction without success. I then made a long incision between the sartorius and tensor vagina femoris and in this wound divided the ilio-tibial band and tensor vagina femoris and the outer part of the iliacus, and notched very deeply in several places alternately upon opposite sides the sartorius and rectus. The anterior part of the joint capsule appeared to be intact and thick. The limb was now flexed, abducted and everted, and the head of the bone readily and almost silently slipped into the acetabulum. Still, complete extension of the limb was impossible, and in the wound one could feel that the psoas tendon was the chief resisting agent. A weight extension was applied. There was not much pain and the wound healed perfectly. The boy left the hospital on July 30th with the hip joint ankylosed in a slightly flexed position. I have recently seen the patient. He has had no pain, is able to walk with comfort, but presents all the disabilities of an ankylosed slightly flexed hip joint.

Case II.—Fever, probably scarlet fever: History of injury on fifteenth day of illness; dislocation of right femur of sciatic variety; extensive myotomy and reduction without opening capsule three years after; recovery with movement, but with shortening to the extent of half an inch.

J. W., aged 10 years and 8 months. Admitted to Padding-

ton Green Children's Hospital on September 24, 1897. He is said to have been perfectly healthy until three years ago, when, according to the mother's statement, he had a severe attack of scarlet fever. He was very ill for many days, and became much wasted, and passed everything under him. He had much pain all over, but his mother did not think that the pain was in the joints, nor that the joints were swollen.

On about the fifteenth day of the illness the boy slipped off the bed and fell upon his knees. This caused him to scream for a short time. A week later he was seen by a doctor, who ordered his removal to an infirmary because he was so ill and weak. The mother was unaware of the joint trouble until the patient was discharged from the infirmary three months later wearing crutches. He has not complained of pain since.

Present State.—He appears to be healthy, though he is very thin. He shows plainly dislocation of the head of the right femur, which can be felt through the wasted buttock. The head of the bone lies in the position of the anterior part of the great sciatic foramen. Extension is greatly limited, the limb is adducted and inverted. He can flex the limb well, and through a limited range rotation movements can be made.

A skiagram shows that the femoral neck is bent somewhat downwards, so that the top of the trochanter is on a level with the highest part of the head; the head appears to be compressed from above downwards, and the upper border of the neck continues the convex curve of the head.

After remaining in bed for a fortnight with extension of the limb by weight the head of the bone was replaced by an operation precisely similar to that adopted in the first case. The top of the trochanter after the reduction lay half an inch above Nélaton's line, and this fact was attributed to the alteration in shape of the upper end of the femur. As in the first case the psoas tendon was found to offer great resistance to complete extension. Healing was perfect. A weight extension was applied, and the boy was discharged November 29th. The limb was capable of complete extension and possessed of a fair range of movement.

I have lately seen the patient. He wears a half-inch sole to his right boot; he walks with a slight limp. Rotation

movements are rather deficient, but considering the duration of the dislocation there is very good function of the joint.

REMARKS:

The term "spontaneous" has for many years been applied to such dislocations, and for inclusion in this series it appears to be necessary only (*a*) that a dislocation shall have occurred in the absence of such violence as can dislocate a normal joint, and (*b*) that the form of the bones shall not have been materially changed prior to the dislocation.

I wish to draw your attention to those dislocations only which are connected with acute fevers. Dislocations have been many times recorded in connection with typhoid fever and acute rheumatism; a few times in cases of scarlet fever, and very rarely in the course of typhus. On reading the records of cases one is struck with the marked clinical difference between the typhoid and the rheumatic cases.

The salient features of dislocation connected with typhoid appear to be these: Dislocation has usually occurred in the early days of convalescence, when the patient has been profoundly feeble. In many cases the precise instant of displacement has not been noticed. In other cases some slight strain as in getting out of bed or turning in bed has been recognized as a contributing cause. As far as I have sought, in no case have any joint phenomena been noticed antecedent to the occurrence of dislocation, and in many cases there is the positive statement that the dislocation has been the first fact observed. The dislocation has usually been attended and succeeded by very little pain. Reduction has usually been easy even after some weeks, and recurrence has happened in several cases.

In the rheumatic cases the dislocation has been preceded by marked evidence of acute inflammation, attended by terrible suffering, and a vicious attitude of exaggerated flexion. The occurrence of dislocation has been almost immediately followed by great relief of pain. Of the cases occasioned by scarlet fever, most have conformed to the typhoidal type, in that they have occurred suddenly without previous evidence of joint disease. I think my second case falls into this group, and regret

that it has been impossible to obtain a more definite history. There is little doubt but that my first case was secondary to acute suppuration in the hip joint.

On the pathological anatomy of the subject I have found very little information. Mr. William Adams,† in a case of excision for rheumatic dislocation of the head of the bone upon the ilium, found the capsular ligament ruptured, and the torn margins of the rent closely embracing the neck of the bone.

Dr. Rawdon,‡ of Liverpool, having excised the head of the bone for a dislocation following typhoid, only mentions that he found the head globular and undiminished by any considerable absorption, and that the cartilage was healthy, except for a little absorption at its periphery.

Verneuil's theory of the pathogeny of such dislocations seems to me to command respect. May I remind you that he attributes the chief cause to the condition of the surrounding muscles, some of which he believes to be in a paretic condition from alteration of structure, while antagonistic muscles not so altered, and acting relatively excessively, apply force in an abnormal direction, thrust the head of the femur out of the acetabulum, and push before it the softened capsule, or push the head through the capsule.

My cases throw no light upon the behavior of the capsule in these cases. I do not know whether the capsule was torn as in Adams's case. I do not think that it was merely stretched and elongated. It may be that there was a separation of the back part of the capsule at its attachment to the femur, which allowed the displaced head to carry with it a hood of capsule and synovial membrane. This would be able to explain the absence of bony grating, the ultimately easy reduction of the dislocation, and, in my second case, the good mobility of the joint.

The clinical records of typhoid dislocations do not convince one that inflammation of the joint is necessary for the production of so-called "spontaneous dislocation."

One must admit the rare occurrence of quiet monarticular synovitis with effusion in patients convalescing from typhoid, but in my reading I have not found that this was observed in any case antecedent to the dislocation. Perhaps degenerative

changes, analogous to those occurring in muscle fibres, soften the ligaments, or their attachments to the bones.

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EDITORIAL COMMENTS

Pneumonia in Children

Pneumonia in childhood has of late been deeply occupying the attention of pediatricists, and without doubt much good has been effected by the interchange of opinions, and by the ventilation of the subject generally. At the meeting called together by the chairman of the pediatric section of the New York Academy of Medicine, many points in connection with the treatment of the disease were made clear which, up to that time, had been decidedly misty. When the fact is considered that pneumonia is one of the most deadly maladies to which children are prone, it cannot be denied that the time had come for a certain consensus of opinion to be arrived at in regard to its treatment. But before touching on the subject of treatment, it may be as well to refer briefly to the light that has been thrown on the etiology of the disease by means of the researches of bacteriologists. This phase of the matter has been extremely well set forth in an article contributed to the *Edinburgh Journal*, of August 26th, by Dr. James Carmichael, physician to the Edinburgh Royal Hospital for Sick Children, who says: "Bacteriology has contributed largely to our knowledge of the disease. The rôle which micro-organisms play in the disease is certainly a very important one, as without doubt the toxemia resulting from their growth and development would appear to be not only the main factor in the production of the constitutional symptoms, but often the principal cause of danger to life. Recent bacteriological investigation shows that quite a number of organisms are found associated with this disease. Netter gives the bacteriology in forty-two cases—in twenty-five primary cases. Friedlander's capsuled coccus or pneumobacillus was found in ten; streptococcus in eight; staphylococcus in five; Fränkel's capsuled

coccus in two. In seventeen of the cases there was mixed infection thus: In five pneumococcus and streptococcus; five streptococcus and staphylococcus; three streptococcus and capsuled coccus; two pneumococcus, streptococcus, and staphylococcus; one pneumococcus and capsuled coccus. Mosny and Netter both agree that in cases marked by lobular distribution, streptococcus was usually met with alone or with pneumococcus; whereas those in which the distribution was lobar, catarrhal and fibrinous variety combined, one or other of the forms of pneumococcus, either Fränkel's or Friedlander's organisms, were generally found alone. Other investigators who have studied the different forms of pneumonia have arrived at the conclusion that it is no one organism that causes the disease, but two and sometimes more. Thus plainly proving that the pneumonia of childhood cannot be regarded as a specific disease, seeing that various organisms produce the pathological changes in the lung tissues." The foregoing may be said to be a short, up-to-date presentment of the germ theory of pneumonia in children, and would appear in the main correct. The next forward step, then, is to discover a really reliable antitoxin, but until this is done we must ourselves sift the different modes of treatment at present practiced, and learn from the experience of others in order to arrive at a satisfactory conclusion. At the meeting of the pediatric section, referred to above, some definite opinions were expressed, and from the views of the majority of the speakers we can form our own judgment as to the most beneficial and widely practiced methods of treatment. For example, it was agreed on all hands that rest and complete isolation is absolutely necessary; that careful nursing is one of the most important considerations; and the opinion was unanimous that effective ventilation is essential. The meeting was opposed, on the whole, to the active use of drugs, and few voices were raised in favor of stimulants, while hot poultices were condemned in toto. On the question of bathing, opinions differed

most widely. Not, however, so far as the beneficial effects of baths themselves are concerned, but with respect to their temperature. Some advocated baths as high as 100 F.; others deemed 70 F. a heat better calculated to produce the wished-for results; while one speaker advised the employment of the wet sheet cooled by ice. The large majority of the speakers deprecated extremes of either heat or cold, but recommended the adoption of a middle course. To refer again to Dr. Carmichael's article. In very severe cases with much cyanosis, he suggests the inhalation of oxygen, the small patient lying under a tent, and states that in many cases he has known the treatment to be of signal benefit. In infantile pneumonia, many physicians in Great Britain assert that belladonna acts like a charm. There would, however, seem to be some diversity of views in this country and Great Britain as to the efficacy of the drug treatment of pneumonia in children. The judgment of medical men here, as evidenced by the expression of their opinions at the meeting of the pediatric section, is distinctly against active medication. In Great Britain, on the other hand, the conservative treatment still, to a large extent, holds sway. As, however, the study of children's diseases as a specialty has been more closely and for a far longer period pursued in America than in the United Kingdom, we may claim—without laying ourselves open to the charge of undue presumption—to be more fitted to pass an authoritative opinion on the matter. The pediatric section deserves the thanks of every medical man for the able manner in which the whole subject was placed before them.

**Study of the Hands of Chil-
dren for Indications of
Disease**

A book well worth the reading has just been published in London. The work in question is entitled "On the Study of the Hand for Indications of Local and General Disease," and is written by Dr. Edward Blake,

whose object is to endeavor to show that a patient study of the hand is of great value as an aid to diagnosis in many diseases. The whole book, though small, is engrossingly interesting, but we shall only refer to that part of it relating to children. Speaking of some of the rashes that affect the hands of the young, the author says: "If ecchymoses occur in a child, then we may think of the relapsing purpura of Henoch, formerly known as 'febrile purpuric edema,' more especially if there be present the following group of characteristic symptoms: Abdominal pain with tenderness on pressure, green vomiting, and blood-stained stools. Other juvenile forms are epidemic hemoglobinuria, or Winckel's disease, in which the spleen is occasionally found enlarged. Many years ago Graves, of Dublin, pointed out that purpura, very prone to be associated with the diarrhea of children, is now looked upon as nearly always bacillary. If purpura occur in a girl, it is then probably either angio-neurotic edema, or the morbus maculosus of Werlhof, known also as purpura hemorrhagica. This disease sometimes proves fatal within twenty-four hours; it is then recognized as purpura fulminans." In the chapter on the form of the hand are the following words: "The general shape of the hand and special form of the finger often afford considerable aid to diagnosis, and attention is then drawn to an article published in PEDIATRICS, on October 1, 1896, written by Dr. Telford-Smith, referring to the peculiar formation of the hand occurring in so-called Mongol Idiots, which class, according to Dr. Shuttleworth, form a group of 5 per cent. of mentally defective children. The peculiarity in the shape of the hand to which Dr. Telford-Smith calls attention, exists in the little finger, and consists in a marked outward bowing or curve of the finger. A typical variation from this form is the stunted hands of congenital cretinism. There are other peculiarities in the shape of the hands which are common to young and grown up persons, and which are a fairly sure sign of certain diseases. Take, for instance, clubbed finger ends, which have been

regarded for very many years as one of the most important signs of tuberculosis. Again in Marie's disease (pulmonary hypertrophic osteo-arthropathy), which is found in children as well as in adults, this same clubbing of the finger ends is seen. In connection with whitlows on the hands, Dr. Blake has this to say: "It is of the greatest possible importance to distinguish between the various forms of whitlow. Some belong to the family of the tuberculides, but must not be confounded with the acute or chronic syphilitic ulcer; nor with the whitlow of septic infection, so often seen in underfed children in a house with defective drainage." The hand should undoubtedly not be neglected by the physician when making a diagnosis, as many signs are to be there found which, if correctly interpreted, will assist greatly in coming to a correct decision. We fear, however, that at present the importance of giving any special study to the hand will not be appreciated by the student of medicine or by the general practitioner. The student in these days has, as a rule, to spend all his available time in doing the work that is absolutely necessary to gain his degree, while when qualified, his time is spent in trying to make both ends meet. Nevertheless there would seem to be no reason why the principal signs indicating disease, which are to be found on the hands, should not be learned without the expenditure of too much time. To those medical men who are well endowed with this world's goods or who are animated by the spirit of scientific research, we would recommend the study of the hand as a pursuit at the same time useful and interesting.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON LARYNGOLOGY AND RHINOLOGY.

Stated Meeting, November 23, 1898.

JONATHAN WRIGHT, M.D., Chairman.

Nasal Catarrh in Children; its Cause and Treatment.

Dr. CLARENCE C. RICE read a paper with this title. He divided the catarrhal conditions of childhood into acute and chronic; also into simple catarrh and purulent catarrh; and also into hypertrophic and atrophic. In his opinion, fully 80 per cent. of the cases of chronic nasal discharge among children have, as their chief cause, more or less enlargement of the pharyngeal tonsil. This was not always, though frequently, accompanied by enlargement of the faucial tonsils. Because of the narrowness of the space normally in children, it did not take any very marked degree of adenoid hypertrophy to give rise to chronic catarrh. Although Dr. Bosworth placed purulent rhinitis in a prominent position in connection with the etiology of catarrh in children, Dr. Rice said that he had, himself, but rarely met with that condition, as described by Bosworth. The latter observer states that the prominent sign is the presence of a bright yellow discharge of pus from the nostrils, and that the affection terminates eventually in atrophic rhinitis. The purulent discharge may be stopped ordinarily by the removal of all nasal obstruction and the cleansing of the passages. Regarding the various forms of obstruction, the speaker said that he did not recognize deviation of the septum unless the deformity were sufficiently marked to interfere with nasal respiration. In his opinion, chronic hypertrophic rhinitis is comparatively rare in children. Many apparent hypertrophies arise from interference with the nasal circulation and disappear as soon as the real cause of the obstructed nasal circulation is removed. He had rarely found spurs on the nasal septum sufficiently large in children under 12 years of age to demand treatment. Naso-pharyngeal catarrh occurs in children only as a symptom of enlargement of the pharyngeal tonsil. Atrophic rhinitis is

present in about 10 per cent. of children over 5 or 6 years of age, and is characterized by an abnormal roominess of the nostrils and by diminished moisture, with a tendency to the formation of crusts. This condition was much more commonly met with in the children of the poorer classes than among others. Many of these cases may be prevented or speedily controlled by prompt treatment. Ozena should be looked upon as only a symptom of several pathological states. The most common cause of nasal catarrh in children, according to the speaker, is enlargement of the pharyngeal tonsil—a condition common to all classes of children, and very frequently the sequela of the acute eruptive fevers. It is the imperative duty of the physician to remove these adenoid hypertrophies at an early stage, and then to prescribe non-irritating detergent solutions, or bland powders or oils.

Dr. A. JACOBI opened the discussion. He said that while nasal catarrh is very common, and often severe, in young children, adenoids are rarely found in these young subjects. The comparative smallness of the nasal cavity has much to do with the development of nasal catarrh in early life. The lower nasal passage scarcely exists in the baby, and the middle passage is very narrow. The infant cannot expel the secretion which collects here, and as it is not usually washed out by the mother or nurse, it soon accumulates, and sets up an irritation which leads to nasal catarrh. Another fact, often overlooked, is, that the newly-born babe is desquamating over all of its integuments, and that there is a rapid change of the epithelium into mucus. The irritating material being very readily absorbed by the numerous lymphatics, the result is soon made evident by enlargement of the lymph bodies, notably those adjacent to the angle of the jaw. It was not at all necessary in many cases to remove both adenoids and enlarged lymph nodes by operation, for, if the process were not of too long standing, and the nodes too hyperplastic, they could be restored to their former size by the removal of the source of irritation. In the same way it was possible, under the same limitations, to reduce the size of the adenoid growth. It should not be forgotten that adenoids are not the cause, but the result of nasal catarrh. The primary cause was to be found in a neglected rhinitis. Adenoids are rare in children under 3

or 4 years old, though common in those over 8 or 10 years. In view of these facts, Dr. Jacobi said that it was rational and proper to insist, as he made it a rule to do, that all babies should have the inside, as well as the outside of the nose, cleaned every day with warm salt water. An additional and very important reason for advocating this daily toilet of the nasal passages was to be found in the great liability of infants of this age, while crawling around on the floor, to introduce into the nose various forms of filth and infection. It was certainly a significant fact that the different varieties of meningitis are most commonly observed between the ages of 2 and 5 years.

Dr. HENRY DWIGHT CHAPIN said that in children of 4 or 5 years, suffering from nasal catarrh, he had almost invariably found marked hypertrophy of the adenoid tissue. Even a slight degree of such hypertrophy was sufficient to set up frequent acute coryzas. It was his practice to prescribe for these cases irrigations of albolene, and if this proved inadequate, to scrape out the adenoids. A most troublesome and persistent form of nocturnal cough was often dependent upon slight hypertrophy in the vault of the pharynx. It was possible that the prominent ring of adenoid tissue placed around the food passage in children was intended by nature as a safeguard against the introduction with the food of noxious germs.

Dr. J. HENRY FRUITNIGHT also endorsed the daily toilet of the nasal passages, and directed attention to the observations of Dr. A. Caillé, which seem to prove that this practice diminishes the liability to diphtheritic infection. Whatever might be said about the part played by heredity, it would hardly be denied that constitutional conditions, such as rachitis, tuberculosis and syphilis, predispose to nasal catarrh, and aggravate it when already present.

Dr. WALTER LESTER CARR also spoke of the importance of taking into consideration the patient's general condition, and of the importance of keeping the nasal passages clean during an attack of any of the acute exanthemata. In every case of catarrh, whether acute or chronic, the physician should examine for enlarged adenoids. Although it was a rare thing to meet with true purulent rhinitis, he had observed it occasion-

ally, and in these cases had been impressed with their rebelliousness to treatment, about the only successful method seeming to be the internal administration of creosote.

Dr. O. B. DOUGLAS spoke of the far-reaching results of the too common practice of neglecting nasal catarrh in the early stages. He favored irrigating the nose with a normal saline solution which had been previously rendered sterile by boiling.

Dr. W. K. SIMPSON said that the rhinologist was usually confronted with a chronic condition, in which the adenoids, nasal spurs, and enlarged tonsils, the result originally of a neglected catarrh, had become a cause for the continuance of this catarrh. If the nasal passages were properly attended to during the attacks of the exanthemata, nasal catarrh was not likely to follow them. He was one of those who believe that nasal catarrh is exceedingly apt to follow dentition—one of the critical periods of life. Bad hygiene, constipation, and other conditions assist in the development of catarrh. If atrophic rhinitis followed on hypertrophic rhinitis in children, this transition would certainly be observed, which was not the case. It was possible, he thought, to irrigate the nose without much risk of exciting otitis. All forms of irrigation produce some irritation, and, in older children, he had succeeded in preventing this by first spraying the parts with a very weak solution of cocain.

Dr. WENDELL C. PHILLIPS said that, in his experience, the parents of children having nasal catarrh, had almost invariably also been sufferers from the same affection, thus pointing to, at least, a hereditary tendency. If children were coddled less, and brought up so as to get more accustomed to sudden meteorological changes, there would be much less nasal catarrh. He believed, with Dr. Rice, that adenoids in the pharynx are much more common than enlargement of the faucial tonsil. It had often been asserted that adenoids are not seen in children before the eighth or tenth year, but he had himself removed a considerable portion of an adenoid growth in an infant of four months, for the relief of a purulent discharge from the ear, and the operation had resulted in a complete cure.

Dr. CHAPIN objected to the use of cocain, no matter how

dilute the solution, in young children, because of their proneness to exhibit the poisonous effects of this drug.

Dr. JACOBI said that he had also seen adenoids in very young infants, and had removed them. He did not wish to be understood as claiming that every adenoid growth was the result of a nasal catarrh.

Dr. WRIGHT remarked that he had observed, post-mortem, congenital adenoids. In all of the cases of adenoids coming under his notice there had also been decided hypertrophy of the post-nasal tissue.

Dr. RICE closed the discussion. He said that he believed that regular spraying or irrigation of the nose in cases of adenoids was a dangerous practice because of the liability of producing otitis; moreover, owing to the nasal obstruction present, these measures rarely succeed in efficiently cleansing the parts.

BATH AND BRISTOL BRANCH OF BRITISH MEDICAL ASSOCIATION, OCTOBER, 1898.

Mr. CHARLES A. MORTON, of Bristol, showed lantern slides of skiagrams of ten cases of genu valgum in children. He had had a dozen skiagrams taken of this deformity, and they all showed that it was due not to a rickety curve in the lower end of the femur, associated with elongation of the internal condyle, as was commonly taught, but to curvature of the tibia and fibula. However, Mr. Morton proposed that division of the femur should be abandoned, and the tibia and fibula divided, and he showed photographs of patients operated on in this way, in which the deformity had been satisfactorily corrected. Supra-condyloid osteotomy of the femur corrected the deformity by causing obliquity of the knee joint, but osteotomy of the tibia and fibula left the line of the joint transverse and did not produce deformity in a normal bone, but rectified the mal-position of the limb by straightening the curved bones. The subject has been more fully dealt with by Mr. Morton in a paper published in the *British Medical Journal*.

ABSTRACTS

SPORADIC CRETINISM IN ONTARIO.*

ALEXANDER MACPHEDRAN (*Canadian Jour. of Med. and Surg.*, 1898, *iv.*, 275) says that it seems immaterial which preparation of thyroid is given. The fresh gland, the desiccated gland, and even the colloid substance have been found equally efficacious. It is important that the preparation used be free from decomposition products, as these probably cause the unpleasant effects frequently met with



FIG. I.



FIG. II.

from its administration. The dose should be carefully graduated according to the age of the child. We may begin with half a grain of the desiccated gland two or three times a day, and, if no unpleasant effects result, increase the dose in a week or two to one grain, to be increased still further later if improvement be not satisfactory. If unpleasant effects result, such as a rapid pulse, a feeling of depression or fever, the dose should be lessened, or a fresh preparation tried. The necessity for continuance of administration of thyroid is uncertain. Dr. Bury (*British*

*Blocks kindly loaned us by the Editor of the *Canadian Journal of Medicine and Surgery*.

Medical Journal, September 12, 1896, page 621) reported the case of a babe one year old that had "ceased to get on, became flabby, fat, lost his vivacity, and had begun to show protuberant abdomen, a lax skin and other cretinoid appearances." Small doses of thyroid speedily "picked him up," and treatment was discontinued at the end of six months without return of symptoms. In more marked cases it will probably be necessary to give thyroid once or twice a week to maintain a good condition. It may be that intermissions of a few weeks from time to time may be allowed without ill effects.

He reports the following cases:

I. Dr. R. M. Calder's case, Petrolia.—Charlie H., aged 15 years; height 3 feet 4 inches (Fig. 1). Appeared well until ten months old, when he had scarlet fever. After this his growth seemed arrested. He did not walk until 2 years old; then he became subject to severe attacks of colic until the age of 12 years. He has a very large abdomen, and walks with a waddling gait; mentally he is infantile. He would like to be large like his brother, and wonders if his father would give fifty cents to have him made that large. His face is usually grave.

II. G. P., aged 9 years (Fig. 2). A marked case of infantile myxedema. Height 26 inches; measurement of head 21 inches, of chest $22\frac{1}{2}$ inches; of abdomen 23 inches. He is unable to stand without support. He was healthy as a babe. From the age of 8 months it was observed that he did not develop well either in body or mind. He is now of a very low grade of intelligence; he is not able to distinguish objects or one person from another. The myxedematous condition is very marked, the lips being very thick, the tongue large and protruding, the nose flat and broad, the eyes very wide apart, the belly prominent and the umbilicus protruding. The vaso-motor tone is very low so that the mucous and cutaneous surfaces are livid, especially if cold. No thyroid is to be felt. He cannot speak, but manifests satisfaction by a grunt. He is not difficult to care for. The skin is harsh and dry, especially on the body. He wears a babe's No. 2 shoe. He has cut no teeth—three sharp points of teeth can be felt in the lower jaw. He has not been treated.

III. Dr. Jerrold Ball's two cases, Toronto.—I, William T., aged 30 years (Fig. 3). Height 3 feet $9\frac{1}{2}$ inches; circumference of the head 22 inches; chest measurement 31 inches; abdomen 33 inches; weight 87 pounds. The spine is markedly curved, backwards in the upper dorsal region and forwards in the lumbar, thus adding to the prominence of the large belly. As an infant he was dropsical, and remained so for years. He walked and talked at 21 months. His legs are much bowed. His lips are very thick, and the lower one drops low, but can be brought up into contact with the upper one; the tongue is moderately thickened. He has all but six of his permanent teeth, but some of them are barely through the gums, and all are poorly developed; he has still a few of his temporary incisor teeth. The hair is scanty and coarse; there are a few hairs on the pubes; he has no beard. The circulation is poor. The

mucous membrane of the mouth is dark and turgid. No thyroid gland can be felt; the appetite is fair, and the bowels regular. He is intelligent, understands what is said to him, and answers well, but the voice is harsh and guttural, and articulation indistinct. He remembers circumstances that have occurred, but cannot acquire abstract knowledge. He is unable to learn to read.

IV. 2, Lilly T., aged 17 years, sister of William T. (Fig. 4). Height 2 feet 8 inches; circumference of head $20\frac{3}{5}$ inches; anterior fontanelle slightly open; chest 26 inches; abdomen 28 inches. Similar kyphosis to



FIG. III.



FIG. IV.

that of the brother, but less marked. She is able to walk about unassisted. The tongue is larger, though not protruded, and the lips thicker than in the brother's case. Her condition is similar but more marked in other respects. She still has many of the temporary teeth. There is a cyst 2 inches in diameter of the right lobe of the thyroid and the left lobe is firm as if fibrosed. The bowels require an enema daily.

The parents of the two are first cousins. The mother is healthy but not robust; the father is strong. One sister, well developed, died at the age of 18 of pulmonary tuberculosis.

V. Dr. John R. Stone's case, Parry Sound.—Male, aged 12 years. When treatment was begun he had grown practically nothing for eight years, and seemed to become actually less intelligent. He has been

treated with thyroid (desiccated) for eleven months. Before treatment his height was 2 feet 9¼ inches. (Fig. 5). Now it is 3 feet 2½ inches. (Fig. 6). Before treatment he would sit all day taking little notice of anything; was able to say a few words and these but indistinctly. He could walk only with the aid of chairs. Now he runs about and takes as much interest in games as other children; talks a great deal, and understands almost everything that is told him. His hair was scant, coarse and stunted, and the scalp covered with thick scurf; now the scalp is clean, the hair is soft and abundant. The neck, formerly short and thick, has become shapely. The joints of the hands and feet were ill-defined; they are now quite shapely. His weight was 42 pounds when treatment was begun. It gradually fell to 35½ pounds, and then began to increase, until now it is 43 pounds. His legs have become much straightened. His appetite was poor and capricious; his bowels were obstinately constipated. Now his appetite is good, and bowels normal. A peculiar circumstance in his case was the fact he had the children's disease mildly and for a very short time.

VI. Dr. A. E. Harvey's case, Wyoming, (Fig. 7).—M. E. H., female, aged 34 years, but looks much older. An aunt and a cousin of her mother were dwarf, and resemble closely this case. M. is goitrous. She cut her first teeth when 7 years old, and began to menstruate at the age of 20 years. Her intellect is very infantile. She sits with feet drawn up under her most of the time.

VII. Dr. A. Gordon Hodgkin's case, Petrolia.—M. H., aged 27 years (Fig. 8). Was a healthy child until 3 years old, although not walking much. Had scarlatina, and showed signs of cretinism after recovery. She is 3 feet in height, the chest is 21 inches and the abdomen 29 inches. The arms and legs are very short and thick. The head is large, the face full, the neck short and thick. The thyroid gland can be felt. The lips are thick, the tongue large but not protruded usually. The gums are swollen, and the teeth much decayed. The bowels are always constipated. She can say a few words. She is easily irritated and cries like an infant.

VIII. Dr. T. F. MacMahon's case, Toronto.—Reta L., aged 13 years; height 34 inches; has grown 3 inches in four years. Marked kyphosis for past four years; abdomen prominent; cheeks look heavy and face old; tongue not protruded; hair normal; speech very imperfect, but she can be understood by her friends. Fontanelles did not close until the seventh year. Her skin is not puffy-looking or harsh. Lips are thick and heavy but mouth is not kept open. Walks with the support of a chair. No trace of thyroid gland can be found. Extremely quiet and inactive but not imbecile. Good-natured and happy. Cannot teach her the alphabet. Memory good for facts, faces, etc. Temporary teeth still present, and but two permanent lower central incisors have as yet appeared. Apparently a normal baby at birth, and was fed at breast. Her father, two years before her birth, met with an accident which caused complete

paralysis for six weeks. He then slowly recovered, so much so as to resume work on a farm. Family history excellent on both sides. Is clean in her habits and affectionate. Has been taking thyroid tablets for past two months, and is much improved in appetite and I think looks brighter.

IX. Dr. McKay's case, Ingersoll.—Joseph B., aged 25 years; a typical cretin. Height 55 inches; weight 70 pounds; circumference of head 23 inches; thorax 25 inches. He is not able to walk without some support. He is easily offended. His memory for objects is poor, but remembers faces and names well. The bowels are obstinately constipated, never moving without a cathartic or an enema. Appetite poor. His



FIG. V.



FIG. VI.

father died of some form of pulmonary disease. He was passionately fond of playing the violin. The boy is equally fond of it but cannot play it, although holding it properly, and knows when it is correctly played. He looks like a boy of 10 years, and is about as intelligent as a boy of 2 years. He has not been treated on account of objection by the family.

The following seven cases are inmates of the Asylum for Idiots at Orilla, and for the notes of them I am indebted to Dr. William Laidlaw, Assistant Superintendent:

X. Lizzie F., aged 41. Her mother was epileptic. Two sisters are feeble-minded and one brother idiotic. Her height is 38 inches; weight 56 pounds. The chest measures 33½ inches, the abdomen 32 inches. She

is quiet, and easily amused. Cannot walk. Cannot speak, but understands some things. The head is large and the neck thick. The hair is coarse and thin. The nose flat, the eyes far apart. The mouth is large, the lips thick, and the tongue large, rough and protruding.

XI. Mary J., aged 43 years. Height 53 inches; chest measures 32 inches; the abdomen 35 inches; the head is 22 inches in circumference. She walks with a waddling gait. Cannot speak, but understands a little. She is bright in summer, but dull and apathetic in the winter.



FIG. VII.



FIG. VIII.

XII. E. B. L., male, aged 19 years. Height 49½ inches; chest measurement 28 inches; abdomen 29 inches; head 21 inches. Speaks a little with the dumb alphabet. He is quick to understand what is said to him. His hands and feet are thick, small and always bluish from poor circulation. He was treated with thyroid grains, 5 per day for three months, without improvement. It was discontinued as he refused to take it longer.

XIII. Janet L. J., aged 24 years. Height 47½ inches; chest measurement 32, and abdomen 33 inches. Head and face are smaller and more shapely than the foregoing cases. The hands and feet are short and thick. The body is thick, and the skin dry and cold. She can walk with a side-to-side motion. She says a few words. Her mental condition is very poor.

XIV. Vera M. L., female, aged 8 years. Height 38 inches; chest measurement $25\frac{1}{2}$ inches; abdomen 29 inches. The hair is dry and skin rough. The hands and feet are thick. She walks with a swinging gait. The tongue is large and the teeth poor. She cannot speak, but understands fairly. She is making fair progress in the kindergarten class. Has been treated with thyroid with considerable improvement. She grew one-half inch in height and became much brighter.

XV. Fanny E. V., aged 29 years. Height 53 inches; chest measurement $31\frac{1}{2}$ inches; abdomen $30\frac{1}{2}$ inches; head 22 inches. Very slow in all her movements. She walks with a shuffling gait. She talks a little, and comprehends fairly well what is said to her. Tongue is large; teeth poor. The skin is hard and the hair coarse and dry.

XVI. Charles H., aged 43 years. Height 47 inches; chest measurement $26\frac{1}{2}$ inches; abdomen 29 inches. Hands and feet thick and mishapen, and bluish. The skin is rough and harsh; the hair scanty and dry. He talks fairly well, and imitates everybody.

XVII. Dr. F. N. G. Starr's case, Toronto.—L. M., male, aged 10 years. Height $41\frac{1}{2}$ inches; chest measurement 22 inches; umbilicus 24 inches; head 21 inches in circumference; flat in upper surface and prominent in parietal regions. Face broad, especially wide across the nose. Slow and deliberate in his movements. The thyroid appears to be absent. The abdomen is prominent. The skin dry and harsh; he sweats but rarely. Constipation constantly present except after medication. The voice is deep, and his remarks are very deliberate. The mental capacity is fairly good. He developed as well as most children till the age of four. Since then he has not grown any.

ON TUBERCULOSIS IN CHILDHOOD.

Dr. COMBY (*Klin. therap. Wochenschr.*, 1898, v., 604) read a paper with the above title at the Fourth French Congress for Internal Medicine, held at Montpellier April 12 to 16, 1898. The following is a resumé:

Among 235 children of the ages from 0 to 2 years on whom a post-mortem was made, 28 (= 12 per cent.) were tuberculous; no child under 3 months, however, was among these. Further statistics showed that the frequency of tuberculosis increases with the age, and reaches its highest point at 2 years of age. These statistics speak against heredity and in favor of contagion. The child which is able to walk is in a much greater measure endangered from inhaling dust containing bacilli than the child still in its cradle. The almost constantly present cheesy degeneration of the tracheo-bronchial lymphatic glands as compared with the relatively

recent date of organic tuberculosis, points to the former as the entrance portal of childish tuberculosis. The child becomes tuberculous by way of the respiratory organs, not through the digestive tract. In 28 post-mortems held on tuberculous children up to 2 years of age, all presented a cheesy degeneration of the tracheo-bronchial lymphatic glands; in 21 the lungs were found infiltrated; of these 7 presented cavities. Tuberculosis in childhood, as a rule, runs a rapid course, and cavities may be formed within a few weeks. The following three forms of childish tuberculosis may be distinguished:

1.—*The Apyretic Form*, presenting an acute milary tuberculosis or cavity formation. In these cases dyspeptic symptoms are most prominent.

2.—*The Febrile Form*, occasionally accompanied by hyperthermia; the disease picture presents a similarity to pneumonia, typhoid fever or meningitis.

3.—*The Common Ulcerative Form of Phthisis*, which is relatively rare.

In the infant at the breast the disease may produce such destructions in the course of weeks as are otherwise only met with after the disease has lasted years. There is present a marked tendency to the appearance of a generalized milary tuberculosis. The complicating diseases which are unfavorable to the course of tuberculosis are in particular measles, whooping cough, la grippe, and diphtheria.

TWO FATAL CASES OF OBSTRUCTIVE JAUNDICE IN CHILDREN.

HENRY ASHBY (*Med. Chronicle*, 1898, x., 28) reports two cases.

In the first case (Martha Ann S., aged 5 years), the mother stated the girl had been well till she had an attack of scarlet fever eight months before, but she had never been quite right since. Three or four months before admission she had whooping cough, and when getting better she became jaundiced, the urine was dark, and the stools quite light colored. She had been jaundiced ever since, and had complained of constant pain in the belly. On admission she was deeply jaundiced, the urine contained much bile-pigment, there was a complete absence of bile in the motions. The edge of the liver could be felt two inches below the ribs in the right mammary line; the spleen was not enlarged. She remained much in the same condition for five weeks, when suddenly she passed a large quantity of blood and clots in her motions. She continued to pass blood in her motions and to get weaker and more anemic, till she finally collapsed and died four months after admission, and about seven months after the commencement of the jaundice. During the time she was in hospital her temperature varied from 97 or 98 to 100 and occasionally to 101 degrees. Permission was granted to examine the abdomen only.

There was no ascites; the liver was enlarged and of a dark green color; no cirrhosis or induration, or toughness on section. Glands in the fissure of the liver, enlarged, soft, and hemorrhagic. The gall-bladder was small, contained mucus only, no gall-stones or inspissated bile; on tracing the common duct downwards it was found surrounded by fibroid tissue, being very small and traced to the duodenum with difficulty. On splitting open the duodenum, the opening of the duct was found after some search; it was so small that it would only admit a probe one millimetre in diameter, and this with difficulty through its orifice, and it was held firmly when it had passed into the duct. The pancreatic duct appeared normal; but the head of the pancreas was hard and indurated, and so was the rest of the gland, though in less degree. The immediate cause of death was a large intestinal hemorrhage; there was no evidence of compression of the portal vein. In this case it was certain that obstructive jaundice had occurred, and apparently the common duct had been compressed by an inflammatory lesion at or near the head of the pancreas. The duct had suffered atrophy in consequence. There was no evidence that the inflammatory lesion was syphilitic.

In the second case there had been some obstructive jaundice for some three years before death. Mary Ann C., aged 7 years, was admitted to the hospital with the following history: She had always been delicate; two and a half years ago she became jaundiced, and her motions of a clay color; she also suffered much from sickness. Recently there had been much swelling of the abdomen and feet. On admission the child was of a greenish color, much emaciated, and her abdomen was enormously distended with fluid; there were patches of vitiligoidea on the upper eyelids. Fifty ounces of ascitic fluid were drawn off by a canula inserted below and to the left of the umbilicus. It was then found that there was a "cyst" or local collection of fluid, on the right side of the abdomen chiefly, and which did not communicate with the peritoneal cavity. The edge of the liver could be felt to be tilted up by the cyst; the tip of the spleen could be felt three inches below the ribs. The cyst was tapped and the enormous quantity of sixteen pints of dark green mucoid fluid drawn off. During the next three months the bile containing cyst was tapped ten times, quickly refilling again, eight to ten pints of biliary fluid being drawn off each time. The child continued jaundiced, the stools were clay-colored and the urine dark. She improved very much and put on flesh. Mr. A. R. Burgess under chloroform cut down on the cyst, stitched it to the abdominal wall, and inserted a drainage-tube. During the next two months bile escaped through the tube into the dressings, and she continued to improve in health. In the hopes of being able to establish a communication between the cyst and the duodenum, Mr. J. Collier undertook an exploratory operation on the cyst, but the attempt had to be abandoned. She died the next day of peritonitis. The post-mortem showed the liver was uniformly enlarged, the capsule thickened, adhesions to diaphragm and spleen, surface finely lobulated, section greenish-yellow color. The cyst was firmly adherent to the under surface of the liver, and appears to be formed by an immensely dilated common bile-duct, including the cystic duct and lower part of the gall-bladder. The hepatic duct emptied into

the cyst. There was no communication whatever with the duodenum, and on slitting up the latter no opening could be found. The cyst wall was exceedingly thin, and adherent to the posterior wall of the duodenum and pancreas. The spleen was large and indurated.

Apparently the sequence of events in this peculiar case was, firstly, a complete obstruction to the common bile-duct at or near its opening into the duodenum, and, secondly, a gradual dilatation of the biliary tract until an enormous cyst was formed, which contained sixteen pints. It is curious to note that in the first case recorded there was obstruction to the duct without any secondary dilatation behind the obstruction; in the second case a gradual dilatation occurred till an enormous cyst was formed.

THE TREATMENT OF INCONTINENCE OF URINE IN CHILDREN WITH THE LIQUID EXTRACT OF RHUS AROMATICA.

In a recent issue of *Treatment* we find that FREYBERGER has used this drug with great success. He gives us a brief summary of the thirty cases of enuresis which he has treated with rhus aromatica.

In all cases spoken of as "cured" at least nine months have elapsed since enuresis had occurred for the last time.

Of the thirty patients treated with rhus aromatica, twelve were boys and eighteen girls; their ages varied from 3 to 11½ years.

At the time when treatment was begun one child suffered from anemia, two from rickets, one from rheumatism, two from chorea, five from morbis cordis, five from large tonsils and adenoids, one from somnambulism, one from pulmonary tuberculosis, and one was microcephalic; while in eleven children no concomitant affection could be found.

One boy suffered from diurnal enuresis; five boys and fifteen girls presented the combined (or continuous) form of enuresis.

The average duration of the treatment was forty days—thirty-five days in boys and forty-five in girls.

The first signs of improvement occurred on an average on or about the seventh day of treatment; the earliest on the third, the latest on the twenty-third day. Thirty-three days on an average were sufficient to produce a permanent cure, fifty-three days to effect a permanent improvement.

Eleven boys and seven girls were permanently cured; one boy and nine girls were permanently relieved; in two girls no improvement could be achieved. A relapse occurred in three girls after an interval of some months.

A temporary exacerbation of the enuresis was noted in eight cases, three boys and five girls; it occurred during or toward the end of the first week in five cases, and during the second week in three cases. While this

exacerbation lasted the patients not only wetted their beds two or three times every night, but the quantity of urine passed into the bed each time was considerably increased. This interesting, though somewhat unpleasant, phenomenon lasted from four to six days, and in all cases terminated rather abruptly. During this period of flooding the urine was always very pale; its specific gravity varied between 1002 and 1007. Considering the great disappointment which parents must necessarily feel at this apparent change for the worse, the author made it a rule to tell the parents beforehand that such a recrudescence might possibly occur, but that it would not last long, and in all probability would soon be followed by a decided improvement.

It would be rash to claim for *rhus aromatica* the qualities of a specific in the treatment of enuresis in children as long as our knowledge of this drug and its action is based upon the results observed in barely 100 cases on which reports have been published; but so much may be said in its favor that it appears to be as efficacious as belladonna, that it may be given for a long time without the slightest ill effect, and that good results may be obtained with it where belladonna proves ineffective.

The astringent taste and disagreeable odor of the liquid extract of *rhus aromatica* are sufficiently disguised by *syrupus aromaticus*.

The dose employed was: Five to ten minims for children two to five years old; fifteen to twenty minims for older children.

A very convenient formula is the following:

℞ Ext. *rhus aromatica* fl., 10 minims.
Syrup. *aromatici*, 20 minims.
Aq. distillate. ad 1 drachm.

Sig.—This amount to be given three times a day.—*Therapeutic Gazette*.

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ORIGINAL ARTICLES

THE RADICAL CURE OF SPINA BIFIDA,*

OBSERVATIONS ON CERTAIN POINTS IN A SERIES OF OVER
THIRTY CASES OF SPINA BIFIDA TREATED
BY OPEN OPERATION.

By JAS. H. NICOLL, M.D.,

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OF late not a few surgeons have, in dealing with cases of spina bifida, discarded injection as being less efficient and more risky than the open operation which modern aseptic practice has made possible, and as being, whatever its merits in times past, unsurgical in the light of present knowledge.

To one who has arrived at this position, cases of spina bifida coming up for treatment present themselves in certain more or less definite classes with reference to the operative measures to be adopted. Whether these classes should include one in which operative measures are to be regarded as futile or unjustifiable remains to be seen. I, for one, have not yet arrived at a decision in the matter. Further observation will be necessary.

It is not my intention in this paper to submit a detailed or tabulated statement of the cases (upwards of thirty) on which

* Read at the Sixth Annual Meeting, July, 1898, of the British Medical Association, Section of Diseases of Children.

I have operated. To do so at present would be to incur the risk of conveying more than one erroneous impression. This will be clear when the following points are borne in mind:

1.—Of the various cases I have from time to time shown, I have brought forward no case which has not been operated on at least a year previously. A certain period ought to be allowed to elapse after operation, during which the diminution or increase of paraplegia and hydrocephalus, or any tendency to recurrence of the spina bifida tumor, may be observed ere the case is recorded as a success or a failure. Several of the cases mentioned below illustrate the necessity for this.

2.—I have made it a rule to refuse to operate on no case sent to me. The effect on the statistics of rigidly following this rule may be gathered from the following instance:

In March, 1898, I had at the same time in the M'Alpine Nursing Home, Glasgow, three infants sent to me with spina bifida. They were three of the most unfavorable cases for operation I have had. The history of these cases is briefly as follows:

T. M., aged 5 months, extremely emaciated and feeble, complete paraplegia; spina bifida tumor, of the size of a small orange, in the lumbar region. This child died, apparently from asthenia, two days after admission, no operation having been done.

M. B., aged one month, well nourished, but with decided tendency to hydrocephalus, accompanied by convulsions; spina bifida tumor in lower dorsal region of the size of a hen's egg. On the morning of March 24, while Drs. Kay and Archd. Young were with myself preparing for the operation in the theatre, the nurse reported the child was dying in a convulsion. Operation was abandoned. The child lived for twenty-four hours through a succession of convulsive seizures, finally dying in one, no operation having been done.

D. M., aged 7 months, extreme hydrocephalus, strabismus, facial twitchings and slight convulsive seizures; spina bifida tumor in the dorso-lumbar region of the size of a medium orange. On March 15, assisted by Dr. Archd. Young, I proceeded to operate. Before operation was commenced the child became apneic under chloroform. Under the measures adopted

breathing was restored, but, looking to the condition of cerebral compression from hydrocephalus, I decided not to renew the attempt to anesthetise; I therefore had to abandon the idea of excision. The child remaining for some time dazed, however, I did not carry out a modified operation (described below). The result was more or less complete thickening and consolidation of the sac during the four weeks which passed between the operation and the death of the child from hydrocephalic coma.

Of this group of three cases, the first two, of course, having died before operation, do not affect the statistics. The last, however, though also dying from natural causes, does.

Of thirty-two cases operated on up to the end of May, 1898, seven died within one month of operation, and, therefore, may fairly be included in the mortality statistics by opponents of open operation. The unwisdom of this, however, and the necessity for bearing in mind that my rule has been to operate on *all* cases brought me, *without exception*, will be apparent in the light of the facts of two of those fatal cases.

A. B., aged one week, brought to me at the Children's Hospital in January, 1898. The child was obviously very ill—thin and feeble, with temperature 104.4° . In the lower dorsal region was a collapsed and partly sloughing spina bifida sac, which was said to have ruptured during birth. This was at once resected under chloroform. The child died on the sixth day after the operation, having developed an eruption which was pronounced by a medical man to be chicken-pox. I am, for my own part, not clear that the eruption was not due to septicemia or pyemia.

Baby C., sent to me in November, 1897, by Dr. J. Turnbull Smith. Spina bifida tumor of the size of a large orange in the lumbar region. Extreme hydrocephalus, the cranial bones of the vault rocking freely on the contents. On November 28 I excised the sac, and before suturing and closing the neck, I elevated the child's head and allowed a considerable quantity of cerebro-spinal fluid to drain away. At the end of a week, the wound having healed by first intention and the health perfect, we allowed the child, who had during the week been kept horizontal, to sit up. The result was disastrous. In two hours the head had "caved in" like a cracked nut, and in a few hours more the child had expired in convulsions.

Of these two cases, the first died either from chicken-pox or from sepsis originated before operation, while the second succumbed, not to the operation for spina bifida, but to undue haste on my part in allowing the child to assume the perpendicular, and thus perish from the effects of my effort to cure or diminish its hydrocephalus at the same time as its spina bifida.

My experience has been such as to convince me that in the matter of mortality it would probably not be difficult to produce a series of cases operated on for spina bifida in which the mortality would compare favorably with that of the operation for the radical cure of inguinal hernia. To attain this result it would be necessary to reject for operation cases in which the sac had burst or was sloughing, and cases with very pronounced hydrocephalus. A moderate degree of hydrocephalus I have found no bar to success.

Over and above the mortality of the operation there remain certain questions to be decided:

I. *The Method or methods of Operating* which in the different varieties of spina bifida offer the best results in the way of permanent cure.

II. *Paraplegia*.—The effect of operation in the relief of, or the production of, paraplegia.

III. *Hydrocephalus*.—The effect of the operation on this, and possible measures to be taken for its amelioration or cure.

These questions will ultimately be decided by the accumulation and comparison of the records of different operators. At present they must be regarded as open.

The object of this paper is to put on record such observations as I have had opportunity of making as may be at this date advantageously compared with the results of other workers.

I. *Method of Operating*.—In all my cases I have made use of (a) Flaps of as much of the skin as was necessary, and (b) Flaps of mesoblastic tissue—muscle, fascia, and, in a few instances, bone, this last obtained by including in the mesoblastic flaps the extremities of the abortive vertebral lamina.

I have in no case felt the necessity of attempting transplantation of bone or other tissue from remote parts of the patient or from animals.

In showing cases to students, and to different societies, I have repeatedly drawn attention to the fact that the gap in the spinal canal, closed by fibrous tissue and muscle only, in most cases becomes very solid and tough indeed.

In dealing with the sac I have adopted various methods, which may be briefly indicated:

1.—In cases in which, after freeing the sac and its neck, I have opened it and found its interior free from nerve-cords, I have simply cut it away, closed its neck, and then sutured the mesoblastic flaps, and subsequently the skin flaps, over the stump.

The wound is dressed with some aseptic or antiseptic material secured by strapping, collodion, or bandage.

For a week the child is nursed night and day prone over the nurse's knee, and the back is kept bare of all clothing in order that any accidental soiling of the dressing by urine or feces may be at once detected and rectified. Indeed it may fairly be said that in cases of spina bifida situated in the lower lumbar region, the success of the operation is as much in the nurse's as in the surgeon's hands. The operation itself in cases of pure meningocele is of the simplest, and, when the tumor was placed in the dorsal or cervical region, I have more than once operated on cases in the out-patient department, and had them taken home and nursed by the mothers with complete success.

Several points seem worthy of mention:

Escape of Cerebrospinal Fluid.—Formerly I took precautions by various means to prevent escape of the fluid while the sac was being removed and its neck closed. Latterly I have given this up, opening the sac and proceeding with excision and suture without any effort to prevent escape of the fluid. Further, as stated below, in cases of hydrocephalus complicating spina bifida, I purposely elevate the child's head to permit of escape of a certain amount of fluid before closing the neck of the sac.

Closure of Neck of Sac.—In a few cases of small sac a



FIG. 1.

ligature is sufficient. In larger sacs I employ rows of catgut sutures. It is a somewhat curious fact that the only two instances of relapse I have had have been in cases where ligature was employed. Fig. 1 represents one of these cases, operated on in the M'Alpine Home in July, 1895. Six months after operation a fresh sac, about one-third the size of the original one, formed slightly to one side of the middle line. This I knew from my own experience of the former sac, to be a pure meningocele. I therefore passed a needle into it and tore and scratched it to pieces. The result has been as shown in the plate. The site of the secondary sac is occupied by a swelling which is a firm fibrous mass, insensitive to pressure and in no way altered in size by it. The child is in perfect health.

Size and Apposition of the Flaps.—In most of my cases I have left the flaps long. The redundant margins of the mesoblastic flaps I have, by means of several rows of catgut sutures, “piled up into a median ridge curled inwards on the stump of the neck much as the cut margins of intestine are piled up against each other, and curled inwards by the Lembert suture in circular enterectomy.

The redundant margins of the skin flaps I have similarly piled up into a ridge, but curled outwards. The advantages of this are, I believe, two: On the one hand, it leaves a bulky mass of tissue to close the gap in the spinal canal. On the other, in place of there being opposed edges, there are flat opposed surfaces, rendering the escape of fluid and the entrance of sepsis more difficult. In time the ridge on the skin becomes more or less completely obliterated.

Figs. 2 and 3 illustrate this.

2.—Cases in which the sac on being freed and opened is found to contain nerve cords. In my earlier cases, several of which were shown on different dates to the Glasgow Medico-Chirurgical Society, I followed the practice of dissecting the cords off the interior of the sac. This is not free from risk, and in one case, operated on in 1895, I produced damage in detaching the nerves, which caused paralysis of one leg, which has remained permanent.

To avoid such risk I adopted a plan which, in connectio



FIG. II.—Excision of spina bifida sac. Scar of wound eight weeks after operation—showing puckered elevated ridge produced by method of suturing. Ridge already largely obliterated.



FIG. III.—Excision of spina bifida sac. Scar of wound three years after operation—position of extremities indicated by pencil marks. Puckering completely obliterated, and scar very faintly seen.

with the demonstration of several cases of cured spina bifida, I described to the Glasgow Medico-Chirurgical Society in November, 1897. The method is as follows:

Flaps of skin and mesoblastic tissues are dissected up in the usual way. The sac is freed and opened. Such portions of it as are free from nerve tissue are excised. The remainder is "cut into ribbons" by incisions made from the interior, parallel with the nerve cords incorporated with it, and thoroughly roughened with the point of knife. The "slashed" and roughened sac is then placed in the patent spinal canal, over which the flaps are sutured in the usual way.

In a certain number of cases—two of which have been mentioned before, and two of which (Figs. 4 and 5) are described herewith—I have still further extended the principle and considerably modified the method of this operation, with good results.

M. D. (Fig. 4) shown to the Glasgow Medico-Chirurgical Society in April, 1898, was sent to me at the age of 5, in 1896, by Dr. Lamont, of Chryston.

Particulars of Case.—Spina bifida tumor 8 by 9 inches across. Complete paraplegia; constant incontinence of urine; condition of bowel in which obstinate constipation alternated with incontinence of feces and flatus.

At that time I operated—opened sac by incision shown in plate—found it so occupied by expanded nerve cords that excision of even small portions appeared impossible. With the knife I carefully tore such small area as seemed free from nerve tissue, and gently, but pretty thoroughly, roughened the whole interior, including the surface of the nerve cords in many parts, and stitched up.

Condition when shown in April, 1898, nearly two years after operation: Sac replaced by a tough lobulated fibrous mass shown in plate. This is considerably smaller than the pre-existing sac, measuring 4 inches by $3\frac{1}{2}$ inches across. It is not tender, is not altered in size by pressure, and was compared in consistence to a lipoma or fibroma by various members of the society who examined it. The child can walk several miles at a time, and has nearly perfect sensation in the legs, which are, however, in some respects like the limbs of infantile



FIG. IV.—Case of M. D. Scar of operation wound very faintly shown.

paralysis, being bluish and distinctly deficient in muscular bulk. The bowel acts regularly, and the sphincter is now efficient. Urinary incontinence has completely ceased except that, as the mother states, a little involuntary escape is apt to occur if the child is made nervous or excited.

Infant at present in the M'Alpine Nursing Home (Fig. 5).



FIG. V.

The plate shows a hard fibrous mass, unaffected by pressure, occupying the site of a former spina bifida tumor of nearly thrice its size.

The sac was opened five weeks ago by a median incision, and was found largely covered by nerve cords. Its interior was roughened in the manner above described, and closed by suture.

It is now practically obliterated. My reason for breaking the rule I have laid down for myself, and producing this plate at this early date after operation, is that, as will be gathered from the plate, the case illustrates what I believe to be a fact—namely, that unless present in an extreme degree, hydrocephalus constitutes no bar to successful operation on spina bifida. The figure indicates what is the fact, that the patient suffers from very pronounced hydrocephalus.

At the meeting in November, 1897, when I first described this method of operating, I stated that, in searching the literature of the subject, I had found a paper by Mayo Robson, of

Leeds, in the *Annals of Surgery* for July, 1895, in which most interesting communication Professor Robson says: "In cases where the cord is expanded, or nerves are blended with the sac, excision of redundant parts or incisions between manifest portions of nervous structures reduces the tumor, and enables it so to be placed in the canal, and usually there is no difficulty in covering the replaced structures."

The method, therefore, into which my experience has gradually led me would seem to be in some respects a combination of the principles of Professor Mayo Robson's operation for spina bifida and Professor Macewen's operation for aneurysm.

It differs from Professor Robson's in that no attempt is made to reduce the bulk of the tumor by the operation, that end being attained by the fibrous contraction and consolidation which follow; and, further, in that the operative procedures are not confined to the portions of the sac between the nerve elements; and, finally, that in certain cases (namely, such cases as plate I., where the sac was torn and roughened internally by a needle passed into it through the skin) the procedure has no similarity whatever with Professor Robson's operation.

II. *Paraplegia*.—The effect of operation in the relief of, or the production of, paraplegia. Above have been given accounts of two cases, in one of which the operation certainly produced this condition and in the other cured it.

With larger experience, and adopting in cases containing nerves either Mayo Robson's method or the method I have detailed above, such an unfortunate result of operative interference as paraplegia should be little likely to occur.

With reference to the relief or cure of paraplegia, I prefer to reserve opinion till the final result of certain cases at present under observation becomes clear. The desirability of this course will be plain when it is kept in mind that, in the case of Dr. Lamont's patient (plate IV.), for instance, a period of two months elapsed after operation before motor and sensory power began to be evident in the legs, and it was more than double that time ere the patient could walk unassisted.

III. *Hydrocephalus*.—On this point, also, I should wish to reserve judgment.

That the operation has any effect in the production of the condition I have no reason to believe, though, in this connection the case of Baby L., sent to me by Dr. Carmichael, of Catheart, may be noted. During convalescence the child was nursed in the usual position—horizontal—and, because of some tendency to diarrhea, I directed the nurse to keep the buttocks well up and in view, to facilitate prompt attention to, and cleansing away of, each motion. The resulting dependent position of the head produced turgidity of the scalp veins, tenseness of the fontanelle, and a distinct squint. Raising of the head removed these symptoms within a few days. It may be mentioned that a former child of the family died of hydrocephalus.

That the operation may be made the means of relieving, and even curing, hydrocephalus I have some reason to believe. I have at present under observation several cases in which the evacuation of fluid during operation for spina bifida has had at least a temporary effect. Whether this simple measure is to prove capable of permanent relief or cure, time will show.

There remain certain further measures, the value of which I am at present testing as suitable cases occur, but concerning which I am not at present in a position to express a positive opinion. These measures are: (a) The establishing of a drainage channel from the spinal canal (at the site of, and during the operation for, spina bifida) into either the peritoneal cavity or the cellular subcutaneous tissue, or both; (b) drainage of the cerebral ventricles, either externally or into the meninges; (c) application of various solutions to the interior of the cerebral ventricles.

AS TO THE INCUBATING STAGE OF PERTUSSIS
AND A HITHERTO UNRECOGNIZED
SYMPTOM THEREOF.

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Hospital of Cincinnati.

IN all the various treatises on Pediatrics, it is stated that pertussis has an incubatory stage which may last from one to ten days, and that the average is from three to four days.¹ These calculations are all based upon a supposed period of exposure to the malady, an infection, and its subsequent development.

It is furthermore stated that this stage of incubation may be recognized from about the fourth to the seventh day by the presence of some febrile movement, of catarrhal symptoms with or without cough.²

It is a fact and it cannot be disputed that in nine-tenths of the cases of whooping cough, in fact one might say in all cases, (and this is true of other infectious disease), we see the patient only when the disease is fully developed, or when it is just about developing, and certain characteristics stand forth prominently at the terminus of the stage of incubation. As to the history, then, of the incubatory period, we rely upon the statements of the mother or nurse, which a moment's consideration will show to be defective and unreliable. They cannot possibly know when the child was first exposed to the disease. It plays around with other children who have the cough in the first stage and in mild form and thus attract no attention. The child is exposed to the infection in school, in a similar manner. Again, it is not at all necessary for the child to have come into direct contact with the infected person or atmosphere; the mother may have carried it home long before, or a casual visitor may have brought with her and

1. KEATING, "Cyclopedia Diseases of Children." STARR, "American Practice of Diseases of Children." J. LEWIS SMITH, "Diseases of Children."

2. Loc. Cit.

conveyed to the child in a kiss of affection the germs of the disease.³ Any conclusion, therefore, based upon the mere statements of the mother, nurse, or other guardian of the child, must be more or less erroneous.

As to the statement that the incubating stage of whooping cough can be recognized "between the fourth and seventh day from a slight febrile movement, from a mild catarrhal manifestation even without cough, or from both," it must certainly be taken with a very large allowance of salt. Leaving the fact of the *prevalence of a certain disease*, which is always an important factor in the making of a diagnosis at this early period, out of the question, it would certainly require more than human acumen to say that these are, in a given case, the preliminary manifestation of a whooping cough, when, as we all very well know, they are likewise the early manifestations of an attack of morbilli or the symptoms of a mild bronchial catarrh.

It is now some three years or more that I had an exceptional opportunity to make certain observations, which lead me to believe that the period of incubation is a much more protracted one, that it is not characterized by any febrile movement or evidence of catarrh, and that it would thus remain unrecognizable but for one phenomenon which it presents to us, and which, perhaps, more extended observation may demonstrate to a certainty to be pathognomonic.

Case I. In the early part of March, 1895, my little niece, aged 5, a stout, lively little girl, living in the same house with me, attracted my medical attention. I noticed that she would give a slight hack (cough). At first it seemed to me as if this occurred only when she came in from playing and romping about. It was not frequent, not more than four or five times a day, counting from early morning till she retired at night. It was a dry, short hack, as when a person clears his throat before speaking. There was no hoarseness; her voice was unchanged.

An examination of the buccal cavity, of the tonsils, fauces and pharynx revealed nothing. The only noticeable feature about them was that they were somewhat pale, but the child had been rather anemic before this. The larynx, as already

3. See ILLOWAY, "Prevention of Infectious Throat Diseases in Young Children, Babyhood," December, 1896.

stated, did not indicate anything abnormal. I examined her chest very carefully but found absolutely nothing.

The child appeared otherwise well; she ate well, played around, wanted to be out in the street all the time, and had no temperature. She slept well.

I gave her, nevertheless, a few doses of wine of ipecac, and later on an ammoniated cough mixture; but as neither seemed to benefit her, and as she seemed well, I left off medicating her and proposed to look on and watch.

For two weeks the hack was noticed only in the day time; then, at the end of this period, her mother noted its appearance in the night; she would give two or three hacks during the night, without being awakened thereby from her sleep. About three weeks after the first appearance of the hack, the child began to complain of feeling tired, though she was lively and would run about in the house; nevertheless, she seemed to become fatigued very soon, and would throw herself upon the sofa for a few minutes, two or three times in the course of the morning, then get up again and run about as usual. She slept longer after lunch than was her wont, lolled upon the sofa in the afternoon, at intervals, just as she did in the morning, and was glad to retire much earlier after dinner in the evening.

At the end of the fourth week, about the beginning of the fifth, the character of the hack appeared suddenly changed; it had become a moist, short cough; the catarrhal symptoms appeared and could be readily recognized. As pertussis was then very prevalent, I began to suspect that the child was affected with it. The bronchial catarrh became more marked, and my suspicion soon proved true; the child was in the first, the catarrhal stage, of the disease.

The attack was an exceedingly severe and prolonged one, and abatement was not noticed till the following September; the cough did not disappear entirely till the early part of December. Indeed, even in January, 1896, some of the vestiges of the disease could yet be traced.

Despite the continued administration of tonics, oil, iron, fresh air, her general health was very much affected, as shown by a persistent anemia, becoming soon fatigued, and a weakness and irritability of the eyes. It was nearly a year before she could be said to have fully recovered.

Case II. April, 1895. B. S., a little girl of 3 years, stout and fat. Her mother asked me to see her, as she had a slight cough. The child had, since a day or two, a slight hack, which appeared only occasionally (not more than three or four times) through the day. She slept soundly at night. No temperature. An examination disclosed nothing. I told the mother that just then there did not appear to be anything the matter with the child, but that it was possible she might develop whooping cough. No medication at present.

I had not the opportunity for as detailed an observation in this case, as in the other, but this much I was able to note, having occasion to see her in the street several times in the day, she living right opposite, that the child had the hack for two weeks. Two to three days later—after the period last mentioned—I was asked to see her again, and found the catarrhal stage of the pertussis fully developed.

The disease ran its course in very mild form, the child being but little affected thereby. By July the cough had already greatly moderated, and by September, when she returned from the country, it had entirely disappeared.

It will be at once seen by the reader that we have in these two cases a striking coincidence—the occurrence of a slight hack (cough), which is not dependent upon any apparent morbid condition of the buccal cavity, pharynx or respiratory tract, preceding for some time an attack of whooping cough and disappearing with the development of the catarrhal stage, the first stage of the disease.

In the first case, where the observation ran over a longer period of time and was more minute in detail, the connection of the slight hack with the subsequently fully developed malady, is more clearly established. We see here this phenomenon manifesting itself at long intervals through the day only; then it appears in the night also; after a lapse of time the lassitude, the tiredness, the feeling of fatigue, so long and so well recognized as a prodromic manifestation of infectious disease, comes on, and very shortly thereafter the malady, fully matured, springs into view.

It is to me very evident that in the two cases, the hack described *was a true and pathognomonic phenomenon* of the entrance into the body of the toxic agent of whooping cough.

I can, moreover, very readily account for it. The *materies morbi* of whooping cough expends its force upon the larynx, and every atom of this toxic agent has the same predilection established within it. It is, therefore, easily understood how, with the entrance of the virus into the body, with the first beginning of the infection, this tendency to irritate the larynx and its structures should at once make itself manifest.

The investigations of Afanassjew,⁴ and more particularly the much later work of Koplik,⁵ point to a specific bacterium as the cause of the disease. If this be true, and further investigation will show, we can account for the phenomenon described in this way: The specific bacterium is inhaled and located upon the larynx (it might be in the nasal passages); there it sets up, at first, the very mildest of irritation, and the hack is the manifestation thereof.

If the hack be then what is claimed for it, the conclusion is inevitable, that the period of incubation is a much more protracted one (two to four weeks) than is commonly accepted; and further that it is not the same in all cases. Thus, it was of four weeks duration in the first case, while in the second, it did not last longer than fifteen days.

The two cases teach also another lesson, one of importance from a prognostic standpoint. It is this: the *longer* the period of incubation (i.e. the greater the resistance of the system to the *materies morbi*), the greater the infection, the severer and the more prolonged will be the sickness; the *shorter* the period of incubation (i.e. the more quickly the system succumbs), the milder the disease and the more brief the period of its duration. In the first case, with the long period of incubation, the disease was of long duration and of great severity, taking the patient nearly a year to recover fully from its effects, while in the second case, with a much briefer period of incubation, the sickness lasted no longer than the ordinary short period, and was very mild in character, the patient's general health not being visibly affected thereby.

The striking difference in the character of the ailment in the two cases is the more remarkable by reason of the following facts:

⁴ *St. Petersburg Med. Wochenschrift*, 1887. Nos. 30, 42. ⁵ *British Medical Journal*, October 16, 1897, p. 1051.

- 1.—Both cases occurred at the same season of the year.
- 2.—Both children were under equally good conditions as regards housing, food, general attention, etc.
- 3.—In neither case could the point of contact be traced.
- 4.—The little girl of Case II. was much the younger, and still her attack was the milder, which is contrary to the accepted rule, that the younger the child, the more grave the disease.

The question is of moment in still another direction. Quite a number of years ago some pediatricists and others attempted to cut short, to jugulate, the disease by the topical application, by means of insufflation of powders chiefly, of agents having antiseptic or germicidal properties. As was to be expected, the efforts were fruitless. However, if the conclusions drawn by me from the observations here reported are verified by the repeated observations of others, assuming that the investigations of Koplik—that a specific bacterium is the cause of the disease—are unassailable, we might, with the early recognition of the disease, or rather its beginning, at a period when the causative factors are as yet but few in number and their action still but a local one, attempt to arrest at once the further progress of the infection, and thus cut off the disease, by the local application of the well known bactericidal agents, either by insufflation or by means of the applicator.

1138 Madison Avenue.

REPORT OF A CASE OF CARBON DIOXIDE CONVULSIONS OCCURRING IN CONGENITAL HEART DISEASE.*

By FREDERICK A. PACKARD, M.D.,

Philadelphia.

THE case herewith reported shows some features that were extremely puzzling during life and were not satisfactorily explained by the findings after death.

On October 29, of last year, A. S., white, aged 6 weeks, was brought to the Children's Hospital, partly because of convulsive attacks, partly in order to have a tumor of the back removed. There was present a spina bifida, operation upon which was deemed inadvisable because of the medical conditions present, for which he was transferred to my ward.

So far as was known no member of the family had had any malformation. The child was born at full term after a normal pregnancy and easy, non-instrumental labor of fourteen hours duration. The tumor of the back was noticed at once, was of about the size of a walnut, and at its apex was covered by very thin skin. The child was not remarkably dusky at birth, but there must have soon developed some cyanosis, as the doctor said, shortly after birth, that the child had heart trouble. This blueness was not particularly noticed by the parents, and but little could be learned from them regarding it, as the spasmodic attacks were the features of the case that overshadowed in their minds all troubles except the tumor on the back.

The convulsions first began when the child was two weeks of age. From that time they had been increasing in severity. They were produced by crying, and seemed to occur only when the child had been deprived of the breast prematurely or given some other cause for complaint. It was said by the parents that internal squint was always present after the convulsions.

The child slept poorly, never more than an hour at a time, and always more peacefully when lying on the left side.

* Read at the meeting of the Philadelphia Pediatric Society, November 8, 1898.

Examination showed that the child was very well nourished. The head was very large, the frontal eminence very distinct. The anterior fontanelle bulged somewhat. The surface of the body, face, and extremities were decidedly cyanotic. The pupils were equal and natural, and the eyes showed no deviations or insufficiencies. Later examination of the fundus by Dr. Randall showed no abnormality of media, disc, or vessels. The ears were also found by Dr. Randall to be perfectly normal. There was no rigidity of the neck or asymmetry of the face. The hands were held in the flexed position but could be readily extended. When seen first he had just had a convulsion and the extremities were very cold.

When percussion of the chest was practiced the child began to cry and showed a peculiar crowing inspiration. Cyanosis soon became marked, the cry continued, and shortly after onset of the crying spell, while the child was deeply cyanosed, there began rotatory movements of the whole left arm from the shoulder, slight convulsive movements of the right arm, and strong flexion of the legs. At the height of the convulsion respiration suddenly stopped and after a long (untimed) interval feeble respirations began, which became gradually more full with coincident diminution of cyanosis. The child then remained quiet and the examination was completed without further trouble.

Examination of the chest gave negative results—substernal dullness (thymic enlargement), abnormal cardiac area or sounds (congenital heart disease), and any pulmonary lesion being especially borne in mind.

In the middle of the back over the upper two lumbar vertebræ there was a large soft mass covered by skin which was very thin and transparent over prominent portions of the growth. The mass had rather a polypoid shape with a distinctly clubbed appearance, and a neck measuring 14.5 cm. in circumference and surrounded by long, thin hairs, and showed distinct umbilication in its centre. Just behind the anus in the median line there was a deep dimple, apparently a pilonidal sinus. The genitalia were well formed, the prepuce, however, being slightly adherent and its orifice narrow.

The knee-jerks were markedly increased, but the signifi-

cance of this sign was somewhat impaired by the fact that there was decided reinforcement from the firmly flexed upper extremities.

Dr. Freeman kindly examined the naso-pharynx and found nothing wrong except for the presence of an abnormally long uvula (in his opinion not enough to account for any of the phenomena present). The child was in the hospital until its death, on November 16.

During this time it remained well nourished, took its food well, and had no symptoms over constant slight cyanosis, convulsions constantly, similar in every respect to that described above and always produced by crying, and rather rapid cardiac failure, followed by death.

Repeated careful examination of the heart detected no abnormality. The convulsions were not truly Jacksonian although the left arm always moved more (not earlier) than any other portion of the body. The daily number of convulsions varied from none at all (on one day) to seventeen. During eighteen days it had seventy-eight convulsions.

No possible cause for the convulsions being found, upon careful examination it was presumed that they were the result of surcharging of the blood with carbonic oxide. Inhalations of oxygen at the onset of the convulsions were therefore used with apparent good result, the convulsion frequently being checked soon after its onset. At times, however, they seemed to have but little effect.

Demonstrable evidence of organic cerebral cause and any sufficient reason for reflex origin of the convulsions being absent, the seizures were supposed to depend upon the cyanosis which visibly increased and attained a high grade before the convulsive movements began.

In the absence of evidence of obstruction to the entrance of air into the lungs and of disease of the latter the cyanosis was attributed to some congenital lesion of the heart although no other evidence of this was present. Its existence was the more strongly suspected because of the presence of spina bifida and the known frequency of co-existence of cardiac with other malformations. The autopsy was made (of necessity) at midnight by the resident physician. The brain showed nothing abnormal, the thymus was not enlarged, the lungs (except for patchy atelectasis of recent origin) were normal, and the

other organs were healthy except for the heart. This was of about normal size and shape and occupied the normal position. The arterial trunks showed nothing abnormal except for free communication between the aorta and pulmonary artery through a patulous ductus arteriosus. The leaflets were all perfectly normal, the septum between the ventricles was perfect. The foramen ovale was widely open, but there seemed to be no deficiency in the true septum except for shortness of the valve.

I have said that same features of the case were not satisfactorily explained by the findings after death. I referred to lack of knowledge as to the branches of the pulmonary artery, which might have shown some more serious lesion had the organs of the thorax been removed *en masse* and more carefully dissected at leisure instead of being removed by the resident physician separately, as is done in adult post-mortems. The heart alone being kept for study, with but little of the vessels attached, it is impossible to tell what further lesions might have been present. The cyanosis is hardly satisfactorily explained by the cardiac condition. There was but little evidence of reason for venous stasis or for deficient access of blood to the lung. Mixture of the venous and arterial blood could occur through the patent foramen ovale and ductus arteriosus, but there was complete absence in this case of the most frequent cause of both congenital cyanosis and persistence of the canal of the ductus arteriosus—stenosis of the pulmonary orifice. It is possible that a more detailed study of the further course of the pulmonary artery might have discovered a more decided lesion.

EDITORIAL COMMENTS

Ignorance and Infant Mortality

Although the death rate of infants of the upper classes could certainly be greatly reduced by a more intelligent appreciation of the laws of health and particularly of those relating to diet, nevertheless it is among the very young of the lower classes that the most excessive mortality prevails. Ignorance and infant mortality go hand in hand. Hugh R. Jones, in his "Howard Medal Prize Essay," published in the journal of the Royal Statistical Society, says: "It is seen that diarrhea is exceedingly fatal during the first year of life—more especially during the earlier months. This fatality, in great measure, is due to the improper feeding of infants. Owing to the neglect and ignorance of mothers the infants are fed on contaminated milk or other food. Among the evidence presented by Dr. Jones, in his prize essay, tending to prove that infant mortality is largely due to ignorance, is a table from a report of the sanitary condition of Boston, Mass., in 1875, showing that in the New England and Middle States the infant mortality from cholera infantum and diarrhea was in proportion to the illiteracy. Dr. Vernon, Medical Officer of Health, for Southport, England, says: "My belief is that all the principal causes of infantile mortality are mostly results of ignorance—ignorance of the modes of spreading and means of restricting dangerous diseases; ignorance of the practical application of bacteriology and mycology to every-day affairs, particularly to food, water, and food materials, on which human existence depends; ignorance of the effects of exposure of children to the ordinary atmospheric conditions; ignorance of that sort of knowledge which Herbert Spencer characterized as of "most worth"—knowledge which tends to directly preserve life; knowledge which it should be the function of

the public school system to make paramount "because the life of the people is the supreme law." It is contended by some that infant mortality is ruled, to a very large extent, by the measure of the density of population. But that this is not wholly the case is shown by the fact that London, the largest of the towns in Great Britain, has also one of the smallest of infantile death rates. Therefore there must be other circumstances besides the conglomeration of people in towns to account for the excess of other large towns over the infant mortality of London. In pneumonia, now that it is known to be a communicable disease, much of the infantile mortality from this cause might be prevented if mothers and others in charge of children knew enough to take the necessary measures to prevent its spread. The same remarks apply to bronchitis and many maladies incidental to childhood. Dr. Henry M. Baker, the author of a very useful treatise on infantile mortality, in summing up, says with reference to infantile mortality: "The most important lessons which it is incumbent on me at this time to mention are: (1) It is astonishingly great; (2) it is most preventable; (3) it is due more to ignorance than to wilfulness; (4) it is due to ignorance among the people of knowledge which is possessed by physicians who can make no general use of it for the benefit of the people except in some way they are permitted to teach it to them." As has been urged before in this journal, physicians should seize every opportunity to educate ignorant mothers how to care for their little ones.

The Crusade Against Vaccination Being Preached in America

The war against the carrying out of Jenner's immortal discovery appears to be spreading far and wide. The anti-vaccinationists are by no means content with their partial victory in England, but are resolved to sow the seeds of disaffection wherever they think the ground fit.

It is announced in *Harper's Weekly* that Mr. William Tebb, one of the most rabid and prejudiced opponents of vaccination, is stumping this country, "implanting in receptive minds distrust of the value and appreciation of the drawbacks of Jenner's discovery." Mr. Tebb has long been well-known in England as a leader of the anti-vaccination league, and in consequence is well qualified to lay bare the defects of the procedure. The rôle of critic is even a somewhat easy one, in even the most perfect systems emanating from men's brains. Some drawbacks can be pointed out, and in the case of vaccination the task of picking holes is eminently free from difficulty. When the fact is taken into consideration that educated and cultured people often prefer the services of Christian Scientists, bone setters, and quacks of all kinds, it cannot be a matter for surprise that imperfectly educated persons should be easily led away by glib talkers, who are well versed in their part, and who have all the disadvantages of vaccination at their finger ends. Mr. Martin, the writer of the article in *Harper's Weekly*, puts the situation well when he says "orthodox persons who accept vaccination as confidently as though its efficacy were specified in the shorter catechism, will be surprised to find what a respectable appearance of a case can be made against it, while, of course, to make a case against compulsory vaccination is no trick at all." Mr. Tebb has declared his intention of making a lengthy tour of this country, disseminating his propaganda far and wide, but we have sufficient faith in the good sense and intelligence of the majority of the American people to believe that they will be proof against the wiles of this charmer, charm he never so wisely.

**Evidence in Favor of
Vaccination.**

The action of the English Government with regard to vaccination has stirred up its supporters in all parts of the world, and scarcely a day passes that does not bring over-

whelming proof testifying to its efficacy. This is as it should be, for the success met with by the anti-vaccinationists has been in a great measure owing to the extraordinary supineness of the disciples of Jenner. Therefore it may be that the temporary set-back will be for the ultimate good of the cause, by arousing the upholders of vaccination from their lethargy, and by welding them together in a solid mass, and lastly, by improving the methods of operation. In a recent lecture, delivered at Rome, Dr. Bizzozzero made an able and impressive argument in favor of vaccination. He referred to the immense benefits that the re-vaccination law of 1874 had conferred on Germany by controlling the ravages of small-pox. In 1871, with a population of 50,000,000, she lost 143,000 lives by small-pox, whereas through the effective working of the law of 1874 the mortality decreased at such a rate that now the disease claims but 116 victims in the year. Professor Bizzozzero goes on to say: "If it were true that a good vaccination does not protect from small-pox we ought to find in small-pox epidemics that the disease diffuses itself in the non-vaccinated countries. But it is not so. In 1870-71, during the Franco-German war, the two people interpenetrated each other, the German having its civil population vaccinated optionally, but its army completely re-vaccinated, while the French (population and army alike), were vaccinated perfunctorily. Both were attacked by small-pox, but the French army numbered 23,000 deaths by it, while the German army had only 278; and in the same tent, breathing the same air, the French wounded were heavily visited by the disease, while the German wounded, having been re-vaccinated, had not a single case. No more convincing testimony of the good wrought by vaccination has ever been adduced. Compulsory vaccination should be in force in every country of the world, and ignorant parents or parents with a crank should not be allowed to endanger the lives of their young children or imperil the health of the public at large. The principle of freedom may be carried too far.

The Training of Deaf and
Dumb Children

St. Augustine is said to have first recognized that the deaf and dumb should not be regarded as useless encumbrances, but were capable of being educated to a certain extent. But notwithstanding the championship of the famous saint, the lot of those bereft of sight and hearing was in his days, and indeed, up to quite a recent date, a most pitiable one. Treated as outcasts and in some countries esteemed as being under the ban of divine displeasure and summarily executed in ancient times, they assuredly had better never been born. The contrast afforded by their present position is a striking one, and is one of the most impressive tributes to the civilization of today. Most of the advances in the method of instructing the deaf and dumb has been made within recent years. A short time ago the mode of teaching now in use was not only almost unknown, but was deemed impossible. Experts asserted confidently that the oral method was a fantastic vision and could never be of any practical use. On the contrary the authorities of the present time assert with equal confidence that teaching the deaf and dumb by sign language is a relic of barbarism, and predict that the system must soon give way to that of lip articulation. The great advantage that the oral method possesses over instruction by signs would appear to be that a child by these means can be taught his native language. Mr. Alexander Graham Bell, the chief supporter of the oral method in this country, says: "I have no doubt that all things have a use and there may be even a use for the De l'Epeé language of signs, but I do not think it is to be found in the instruction of the young. If use it has at all, it lies, I think, in the possibility of employing it as a means of reaching and benefiting adults who are unable to communicate with the hearing world. But this field of usefulness lies beyond our province as instructors of the young. We deal with children alone. The adults referred to represent our failures. Let us have as few of them as we possibly can." On the continent of Europe and in Great

Britain the oral method is by far more practiced than instruction by signs, and is rapidly gaining ground. America and Canada lag behind in this respect, but if the oral method be the more effective, as it seems to have been clearly proved to be, it is incumbent on this country to at least place herself on a level with the nations of the Old World.

At the twenty-fourth annual meeting of the New Jersey Sanitary Association the President, Vernon L. Davey, Superintendent of the East Orange Public Schools, gave an address on "The Relation of the Schools to the Health of the Community," in which he urged that the same care should be taken of children at school as adults care for themselves at their homes. He pointed out the need of tight fitting windows and doors, and of carefully constructed hallways and basements. He also deprecated the use of the halls as cloak rooms, and said that the basements should be light, dry and airy. After speaking on the necessity of the floors being made without cracks in which filth would gather and propagate the germs of disease, and drawing attention to the importance of the color of the walls and of good ventilation, Mr. Davey mentioned two essential points. The first referred to the fifteen minutes' recess which has for some time been considered necessary to the health of the children. It appears that this theory is being abandoned, and that it has been boldly asserted that the recess is a source of harm rather than good, "that many of the less robust pupils will become chilled and will contract colds and lay the foundations of affections of the pulmonary system." The other and more important point to which attention was drawn is the feeling which has recently been frequently expressed by educators with regard to the overlooking of the physical education of the children, or in Mr. Davey's words, "that there should be some

sort of supervision of the physical side of the pupil—not merely in the way of giving a few minutes daily to light calasthenics, but in securing a frequent, professional observation of the pupil's physical condition. This may include not only a daily scrutiny of the class as a whole but an occasional examination of each individual, with particular reference to his sight, hearing, and the condition of his lungs. This examination should not only be accompanied by a careful diagnosis and prescription by the school examiner, but should, when necessary, be followed by a note to the parent suggesting the wisdom of consulting a physician." This plan appears to be quite feasible, and if followed out should certainly conduce to the bodily welfare of the young. Much might be done by judicious physical training to improve the stamina of the rising generation.



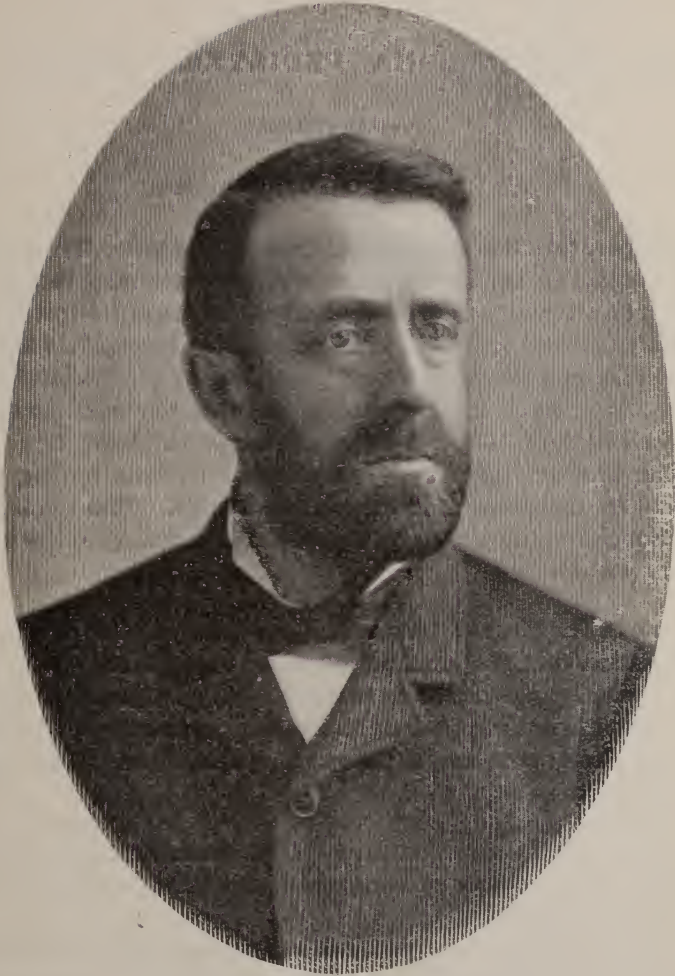
OBITUARY.

Dr. WILLIAM TOMLINSON PLANT, Emeritus Professor of Pediatrics in the College of Medicine, Syracuse University, died at his home in Syracuse, October 27, 1898, at the age of 62. He graduated from the Medical College of the University of Michigan in 1860. When the Civil War broke out, in 1861, he offered his professional services, was examined, and received a commission from President Lincoln as Assistant Naval Surgeon. He was assigned to a number of vessels during his long and very eventful service, which was co-extensive with the war itself. Not long after leaving the service he located in Syracuse, where for many years he was engaged in the active practice of medicine, and numbered among the very best physicians of the city.

When the Geneva Medical College became the College of Medicine of Syracuse University, Dr. Plant was appointed Professor of Medical Jurisprudence, becoming a member of the first faculty which gave lectures in the new college. He was soon made Professor of Clinical Medicine, and then of Pediatrics. The latter chair he held for many years and until he became physically incapacitated for the work. He was acknowledged by all students to be one of the best of teachers. His lectures were specially clear and practical, and no time was more profitably spent than that under his instruction. He was a frequent contributor to medical literature, especially in the field of diseases of children to which he devoted so much attention, and his writings were characterized by the same clearness and helpfulness which distinguished his lectures, didactic and clinical. In addition to his professional work, he also served the College of Medicine most faithfully for many years as its Registrar. No one of those men who labored to establish and develop this department of the University will be more gratefully remembered for his efficient service than Dr. Plant.

He was unassuming in manner and conscientious in service along each of the many lines in which demands were made upon him. To an unusual degree he enjoyed the confidence of the community in which he lived, of the patients he served so devotedly, and—attesting the true character of the man—of his medical associates.

GAYLORD P. CLARK.



DR. WILLIAM TOMLINSON PLANT.

Born 1836—Died, 1898.

SOCIETY REPORTS

THE PHILADELPHIA PEDIATRIC SOCIETY.

November 8, 1898,

F. A. PACKARD, M.D., President.

Congenital Narrowing of the Pulmonary Orifice.—

Dr. S. McC. HAMILL showed a boy, aged 6 years, in whom there was a very strong systolic thrill with a loud, low-pitched, distinctly limited systolic murmur in the second left inter-space. There was scarcely any hypertrophy of the left ventricle. The right border of cardiac dullness extended an inch and a half to the right of the right edge of the sternum.

The child had not been cyanotic at any time during his life, and there was no clubbing of his fingers. The condition was thought to be due to a congenital narrowing of the pulmonary orifice.

Dr. D. J. MILTON MILLER.—I do not think that there is any question that the physical signs point to pulmonary stenosis. The only question is as to its origin. There is a possibility that it is not congenital, but so long as there is no history of any illness that might have caused it, I think we must accept the lesion as of such origin.

Dr. J. P. CROZER GRIFFITH.—The doubt naturally arises whether this is a case of congenital stenosis because of the absence of cyanosis.

Moreton Stillé, in a classical article published years ago, analyzed a long series of cases of congenital heart disease and found in every case where there was decided cyanosis that pulmonary stenosis was present, and conversely where pulmonary stenosis was present cyanosis was present also. He was among the first to point out that congenital cyanosis was not due to the mixture of arterial and venous blood, but to some obstruction in the pulmonary circulation, such as pul-

monary stenosis. If the murmur in the child presented is due to pulmonary stenosis the question arises, if Stillé is correct, how can it be that he has no cyanosis at all. However, it seems often difficult, and often even impossible to base a diagnosis of stenosis upon the character of the murmur, especially when we remember that only about 5 per cent. of cases of pulmonary stenosis, as seen at autopsy, are pulmonary stenosis alone, and that the others are all instances of the combination with some other lesion. I think it is probable that this boy must have some other lesion present and that this lesion is, so to speak, so compensating that his pulmonary circulation goes on properly in spite of his pulmonary stenosis, and that, therefore, cyanosis is absent. The most frequent combination of lesions is that of pulmonary stenosis with perforate septum ventriculorum, often, too, with patulous ductus arteriosus. Of course such a combination as that would permit the blood to reach the lungs in a fairly satisfactory way, but even then it is puzzling to know why he has no cyanosis.

A Case of Meningocele, Epispadias and Probable Exstrophy of the Bladder was exhibited by Dr. NEWCOMET.

DISCUSSION.

Dr. GRAHAM.—The portion of Dr. Newcomet's paper dealing with meningocele is especially interesting to me. Several years ago I had under my care in the Jefferson Hospital an infant with a large meningocele. The case remained in the wards several weeks, it was seen by a number of the staff and by several surgeons, and finally after consultation we decided not to operate. The ring of apparent bone that surrounded the meningocele seemed to be so large that the possibility of ligaturing and removing it was not considered. The child failed gradually in nutrition; the tumor became so large that it was difficult to move the patient about and it was finally taken home. The subsequent history of the case is interesting. The child gradually became weaker, the tumor ruptured, and an autopsy revealed the fact that the meningocele had been absolutely cut off from the cranial cavity. I think it had originally communicated with the cavity of the arachnoid and at the time that the child was brought to the hospital it pre-

sented all the typical signs of meningocele, except pulsation. The tumor expanded decidedly when the child cried. About 6 months after I saw this case one appeared at the hospital that was very similar to it, except that the swelling was immediately over the posterior fontanelle. That case also I showed to several of the surgeons and they again declined to operate. The child's condition was fairly good, but this apparent ring of bone at the base of the tumor contraindicated operation. The mother finally took the child home and sent for me later to see it. I found the skin distinctly hot over the tumor, and feeling that possibly we might have pus, I decided to open it. Dr. Lefevre and myself made a slight incision, allowed a lot of pus to drain away, washed out the abscess cavity, and applied a sterile dressing; the child began to improve and got entirely well. This was probably not a case of meningocele, but the differential diagnosis was difficult to establish. In several cases of spina bifida I have been surprised at the smallness of the opening into the spinal canal, and it occurred to me since Dr. Newcomet said that this meningocele was apparently successfully cut off, that the possibility of relieving these cases through operation, especially with modern technique in surgery would warrant a more general use of the knife than has previously been accorded it.

Dr. JOPSON.—There is no doubt about the case being a very marked one of epispadias. I should consider it exstrophy, although there may be some sacculatation of the bladder; I noted the raw, exposed mucous membrane, bathed in urine, and other features of exstrophy and I thought I could detect the orifices of the ureters, although they were very inconspicuous. The swelling above it and just below the umbilicus I think would correspond to a true congenital umbilical hernia. A few months ago I saw a rather interesting case of malformation of the external genitals at the Children's Hospital, which at first puzzled me considerably. It was a case in which there was a tendency to hypospadias which had not gone beyond the cleft in the prepuce and scrotum. The most conspicuous feature was the cleft in the scrotum. When I examined the child the two halves of the scrotum each enclosing a descended testicle, overlapped the penis; on separating them and drawing them to either side it was seen that

the penis was apparently button-holed through the scrotum, and was curved downward so that the stream of urine was directed backwards over the perineum. On raising the penis the glans was seen to be surrounded through three-fourths of its circumference by the cleft prepuce; the glans itself was normal in shape, the meatus urinarius was very small, and there was a very short, tight frenum, which was the cause of the incurvation of the penis. In looking this up in Ahlfeldt's Atlas I found a case which resembled it, excepting that there was associated a perineal hypospadias. It is easy to see how a condition like this could when exaggerated simulate hermaphroditism. One interesting point in connection with Dr. Newcomet's case is the association of a meningocele, which is not uncommon in cases of exstrophy of bladder, as also is the typical hernia on either side not uncommon. In my case there was a supernumary thumb on the right hand. I mention this simply in connection with the well known fact that several malformations often co-exist in one person.

Dr. HAMMOND.—I should like to have heard the results Dr. Jopson obtained in the treatment of his case. As to the patient before us I cannot say that it is a typical case of exstrophy, especially as I could not discover the presence of the ureters, nor is the almost constant hernia demonstrable. Of course the epispadias is very clear to us all. A case I saw some time ago bearing on the treatment, at least, was a very clearly defined one of exstrophy, and the results of treatment were very unsatisfactory indeed. After trying to close the anterior wall of the bladder by plastic operation I found that urine still trickled away. I then endeavored to divert the proximal ends of the ureter into the bowel (Simons method). In one of them I was successful in so planning it. The other was unsuccessful in so far as perfect union was not secured, and as a result leakage occurred. The child eventually succumbed.

Dr. NEWCOMET.—One point of interest occurs to me. The mother had a fall of three or four steps when she was three months pregnant and since the bladder and navel ring are so near together it occurred to me that perhaps the case could be explained by the drawing of the belly wall downward. The heart and liver seem to be in good position, so that this expla-

nation does not seem entirely clear. As to the ring in diagnosing meningocele this case had an appearance very much like that of hydrocele. As the finger approached the opening the skin felt tougher and much heavier and by pressing upwards one could mark out a well defined ring. As to Dr. Jopson's allusion to the urether, I do not think his suggestion entirely satisfactory for I have seen the child stay dry for an hour and then suddenly pass water which would then well up. The child was born five weeks ago, during the last hot weather, and it has never shown any sign of irritation of the skin. The skin around the opening and about the scrotum is in very good condition for that of a baby wearing diapers. Most children born in hot weather have some chafing if the mother or nurse cannot look very carefully after them.

Weighing of Infants.—Dr. J. P. CROZER GRIFFITH read a paper upon the "Weighing of Infants in the First Two Years of Life," with the exhibition of a new weight chart. He reviewed the published tables of weight of Bouchard, Outelet, Fleischmann, Camerer, and others, depicting them, for convenience of comparison, in the form of plotted curves upon a single wall chart.

He exhibited the weight chart, devised by himself, and which he had had published for general use. He then reviewed the investigations made upon the physiological loss in weight during the first days of life, and showed in a single wall chart plotted curves of this loss, according to the studies of the different observers. Finally, he laid stress upon the necessity for systematic frequent weighing and recording of the weight of every infant.

DISCUSSION.

Dr. SCOTT.—I think Dr. Griffith is to be congratulated upon the accuracy of his chart and his "line." I have had under my care for the last fourteen months a child which I have had carefully weighed and the weight of which I have recorded on Dr. Griffith's chart, and found it an extremely valuable acquisition. It is easy for the mother to handle and for the doctor to interpret at a glance. It is especially interesting to me because I have been watching a child artificially fed upon milk from the Walker-Gordon Laboratory, and found that milk

either from that laboratory or modified at home, has caused such growth of the child that the line has coincided practically identically with the weight curve on one of Dr. Griffith's charts. Therefore, it seems a valuable acquisition to physicians who see a large number of breast and artificially fed infants.

Dr. E. E. GRAHAM.—I agree with Dr. Scott that Dr. Griffith has brought a very important subject before the society. The ordinary accepted rule that a child has doubled its birth weight at the fifth month and tripled at from the twelfth to the fourteenth month makes a very good useful working record. Dr. Griffith did not mention in his paper the fact that the weekly gain in weight assists in diagnosis. At my clinic at the Jefferson the scales are used for children under the age of 1 year very much more frequently than the thermometer and very often give more assistance in arriving at a diagnosis than does any other single factor. In case of malnutrition, for instance, in which the change in the child's appearance from week to week is very slight; in which the question of tuberculosis occurs in those; in which the child has enlarged glands, and has slight, if any, fever, but in which the disorder of digestion is not in itself sufficient to account for the wasted condition, children of perhaps 10 months of age but not weighing more than ten or twelve pounds, I have come to the conclusion that if a child gains a few ounces from week to week it will improve. I am unable to decide at times, until the child has been weighed, whether the case is malnutrition following indigestion or whether it is one of malnutrition associated with tuberculosis, and if after two or three weeks of modified milk treatment with appropriate treatment devoted to digestion, the child does not gain in weight, the diagnosis has, in my experience, almost always been tuberculosis and not malassimilation connected with indigestion.

Dr. D. J. MILTON MILLER.—I desire to refer to two points. One is as to the average weight of a child at the end of the first year. I am glad to see that Dr. Griffith puts the average above that of most accepted charts, particularly Holt's, which I believe is the most widely accepted in this country, and in which the weight at one year is placed at 20 lbs. I have in my hand the records kept of three children, one of them now a child of 9 years of age. One child was weighed daily for six

months, and then weekly until the close of the first year, the other two children until they were 2 years of age, were weighed every week. These were all children in good circumstances in private practice. I can only account for the low average generally given by the fact that the average is taken from hospital children. In my cases, one child weighed at birth 7 pounds; this child was fed on the breast ten months, and then artificially fed, and weighed at the end of the twelfth month $22\frac{3}{4}$ pounds. The second child was fed artificially from birth. The first child was a girl, the second was a boy. At the end of the twelfth month the boy weighed 22 pounds 5 ounces. The third child, a girl, who was breast-fed until the sixth month, and, after that, artificially fed, weighed at the end of twelve months 22 pounds 10 ounces. The very striking agreement of these figures is interesting and instructive.

Another point I would like to call attention to is that it is necessary not to weigh the child too often. If a child is weighed every day it is remarkable what variations will occur. I have the record of a child whose weight was taken every day for six or seven months. The child gained 2 ounces one day and next day would gain nothing, then next day $\frac{1}{4}$ ounce, then 3 ounces, or perhaps it would lose; at the end of a week the child would gain 5, 6, or 7 ounces. Then variations continued all through the first year. So if a very anxious mother weighs her child every day she is apt to be alarmed, and even a very anxious physician may be much disturbed by these variations. They occur even in weekly weighings. A child apparently in good health will sometimes not gain at all for a week or so. My observations also corroborate the fact that a child born with a weight below the average has weekly gains above the average until the proper weight for its age is made up. For instance, a child with a birth weight of $5\frac{3}{4}$ pounds, gained at the end of the eighth day $\frac{1}{2}$ ounce, then, in a series of weeks, varying amounts (9 to 12 ounces), far above the average for the normal child. Holt makes the normal healthy average 4 ounces, and I think Starr says the average daily gain is $\frac{3}{4}$ of an ounce, making 5 ounces a week. I think there is no doubt that the use of the scales is the only safe index we can have for the proper growth of a child. The mere fact that a child increases in weight is not, however, a proof that the child is thriving. It is well known that rachitic children are often enormously fat and may gain constantly in weight, but at the same time be

suffering from poor nutrition. The same may be said of those fed largely on the carbohydrates.

Dr. J. P. CROZER GRIFFITH.—I would emphasize what Dr. Miller has said as to a variation seen from day to day. Vierordt has some charts illustrating this vividly. The only time when I have a child weighed more than once a week is when the question of diet is a very urgent one and I wish to know before the week is up whether the child is losing or not.

The matter of the loss of weight in the first week of life is very interesting and confusing. The recorded observations have been made in different ways. One investigator has weighed the children twice a day for the first week or ten days, and another only once a day. One observer's custom was to weigh a child as soon as born. If this occurred at night or before midnight the second weighing was made in the morning. But if the birth took place after midnight the second weighing was delayed until the second morning. This course gave very divergent results in the weights for "one day old." And since all investigators have taken fixed lines in the day time for the weighing, and have followed different measures that may help to explain why there are such variations among the charts for the first ten days.

A Case of Carbon Dioxide Convulsions from Congenital Heart Disease was reported by Dr. FREDERICK A. PACKARD.—See page 69.

DISCUSSION.

Dr. S. McC. HAMILL.—Dr. Packard's case illustrates the fact that extensive lesions, admitting of the admixture of venous and arterial blood can exist without giving rise to cyanosis and other common evidences of a congenital lesion, such as clubbing of the fingers, etc. These facts show that their existence is not necessary in my case in order to make sure the diagnosis of congenital pulmonary lesion. I recall a case that came to autopsy in the Philadelphia Hospital during my residence as interne; a man, aged 75 years, died of pneumonia. At the autopsy there was discovered a patulous foramen ovale that had never given rise to any symptoms during life. The heart was normal in size, and the condition was not suspected.

PRACTICAL NOTES

A Procedure for Removing Foreign Bodies From Beneath the Nails.—*Nouveaux Remedes* calls attention to this procedure: Soften the nail by applying to it a 10 per cent. solution of caustic potash, scrape away the softened portion with a piece of glass, repeat the potash application and the scraping, and the foreign body is exposed and can easily be removed.—*N. Y. Med. Journal*.

In regard to **Asphyxia of the Newly Born** anybody can be taught the following things: That it may lead to convulsions, paralysis, epilepsy, or idiocy; and that it should be prevented, or shortened, by all possible means; that unless there is a vital indication to assist the mother, the baby should be attended to first; and that the necessary means of resuscitation should be resorted to immediately. Any intelligent person can be taught to alternate a warm bath with a cold plunge or the affusion of cold water, the raising of the head from the soiled bedding, the beating of the nates, tickling the fauces, the momentary inhalation of ammonia; the ligature of the cord when the pulse begins to flag, or instantaneously when deep asphyxia requires measures that cannot be taken while the baby is in contact with the mother; also the method of artificial respiration of Silvester or of Laborde. Any intelligent woman may also learn that she should avoid blowing into the mouth or nares of an asphyctic baby, and should herself, under no circumstances, employ electricity for the purposes of resuscitation. During her course of instruction she may be told the reasons. She may forget these, but she must not forget the rules, which she must not break without incurring some penalty for her transgression. Personally, thirty or forty and more years ago, when I had a large obstetrical practice, I met many a woman taught in trans-Atlantic countries, who knew most of these things well and obeyed to the letter the rules imposed upon her by teaching and by habit. That was self-understood and no difficulty was encountered.—A JACOB, *Phila. Med. Journal*.

Classification of Headache.—I. Diseases of the nervous system—(*a*) neurasthenia; (*b*) hysteria; (*c*) meningitis purulenta and tuberculosa; (*d*) pachymeningitis hemorrhagica interna and cervicalis hypertrophica; (*e*) hydrocephalus; (*f*) brain tumors; (*g*) circulatory disorders of the brain: hyperemia and anemia, arterio-sclerosis; (*h*) neuralgic headache: (1) neuralgia trigemina, (2) neuralgia cervico-brachialis; (*i*) migraine; (*j*) traumatic headache; (*k*) the so-called habitual headache. II. Diseases of the sense organs. III. Diseases of the digestive tract. IV. Diseases of the kidneys. V. Constitutional diseases—(*a*) anemia; (*b*) chlorosis; (*c*) diabetes; (*d*) leukemia. VI. Intoxications. VII. Infectious diseases. VIII. Rheumatism of the scalp.—WINDSCHIED, *Public Health Journal, Med. Record*.

Determination of Death of a Fetus.—According to the *West London Medical Journal* for October, Knapp has shown that the death of the fetus is accompanied by the appearance of acetone in the urine of the mother. This may easily be demonstrated, according to *La Presse médicale*, May 22, 1897, by the fuchsine test of CHAUTAD. A solution of fuchsine, 1 to 2,000, is decolorized by sulphuric acid. To make the test, half an ounce of urine is poured into a test tube, and a few drops of the fuchsine solution added. If acetone be present, the color of the urine becomes violet, the depth of color depending on the amount of acetone. This simple test is within the reach of every practitioner.—*N. Y. Med. Journal*.



ABSTRACTS

REPORT ON THE SIXTEENTH CONGRESS FOR INTERNAL MEDICINE AT WIESBADEN, APRIL 13 TO 16, 1898.

F. SCHMEY (*Der Kinderarzt*, 1898, ix., 121). The following papers relating to diseases of children were presented at the above Congress:

The Treatment of Chlorosis with Hot Baths (Rosin, Berlin). Rosin recommends the treatment of chlorosis by means of hot baths of the temperature of 32° R., continued for from one-half to three-quarters of an hour. Finally a short, cold affusion is to be made at its close. The morning session of the second day was made interesting by the discussion of a paper read by Bornstein (Landeck): "Experimental researches on the action of saccharin." He was led to the conclusion that it was advisable to carefully note in diabetic patients, who were taking saccharin, whether an occurring dyspepsia could not be ascribed to the ingestion of saccharin, and advocated close observation where addition to the food, etc., was made of saccharin, which, at the best, was devoid of any nourishment, Thomas (Freiburg), pointed out in the discussion that he had attempted to make the food more palatable to children by the addition of a small amount of saccharin. His success in this direction had, however, been negative. Wyks (Zürich), observed that he had for a long time employed saccharin in very minute doses in children, giving at the utmost 1 centigram (.15 grains), and was pleased with its effects; he had employed it, in the first place to make disagreeable medicines more palatable, and, secondly, to influence favorably the fermentative processes in the intestines in chronic diarrhea.

In the afternoon session of the second day a report by Petruschky (Danzig) was of interest. He was able to diagnose streptotrichosis, from the examination of the sputum of a delicate school girl, who had been suffering for a number of years with a catarrhal pneumonia, and whose parents had died from pulmonary diseases. In the discussion which followed, v. Ziemssen reported the case of a young lady, who for two years past was troubled with paroxysms of hemoptysis every two months, and who, at this time, also expectorated small, round bodies, imbedded in mucus. Buchner was able to isolate the streptotrix from these bodies, and make a pure culture of it. It may also be mentioned that the fungi which were found in the case of streptotrichosis, mentioned by Petruschky, possessed the power to liquify gelatine in its cultures, which was not the case with the streptotrix found in Buchner's case, and this leading to the conclusion that there are probably various sub-varieties of streptotrix.

The fifth session of the Congress was made interesting by the discussion of intestinal auto-intoxication and intestinal antisepsis by Prof. Müller (Marburg) and Brieger (Berlin). The great importance of this subject, especially in pediatrics, is to be seen from the fact emphasized

by Müller, that certain toxic principles under this heading exert a much greater and more dangerous influence on the childish organism than on that of the adult person. As a positive conclusion, demonstrated by the authors of the paper, as well as made clear in the very extensive discussion, in which Ewald (Berlin) was especially prominent, we may look upon the occurrence of intestinal auto-intoxication and auto-infection, for which the bacterium coli particularly is responsible, as generally accepted, although this teaching, as pointed out by one of its early expounders, Albu (Berlin), was considered to be, only a very short time ago, a creation of the imagination. This recognition of intestinal auto-intoxication is of the greatest importance in practice and therapeutics, and we are now able to remove the often extraordinary grave symptoms that we meet with in auto-intoxication, whether they arise from the stomach or the intestinal canal, with great certainty and celerity, by evacuating and irrigating the organs involved. Irrigation of the stomach and of the intestinal canal, according to the view of the authors of the paper, is to be considered as the most efficient of antiseptics. Both authors, as well as most of the gentlemen participating in the discussion, condemned, in the most emphatic manner, the so-called intestinal antiseptics, so that the impression was produced that every attempt at medicinal intestinal antiseptics was altogether foolish and useless. Towards the end of the discussion only some words of commendation were spoken in favor of the oldest of medicinal intestinal antiseptics, namely, calomel. Strauss (Berlin), for experimental reasons, ascribed to calomel, in the first instance, a distinctly disinfecting power on the intestinal contents. He was able to recover, after small doses of calomel, in the markedly colored calomel-stools, large proportions up to two-thirds of the calomel which had been administered; when these calomel-stools were placed in the incubator, they proved, after a few hours, to be sterile. Fürbringer (Berlin) was also convinced of the utility of calomel as an intestinal antiseptic, especially in typhoid fever. Schmey himself had an opportunity during a large epidemic of typhoid fever, which raged in his own home from the beginning of May, 1897, to about the end of January, 1898, to convince himself of the good effects of calomel in typhoid fever. During this epidemic 1,408 cases of typhoid fever were officially reported, the real number of patients was, of course, much greater. Out of these 1,408 officially reported cases, 358 were children. Of these 358 children, 8 died = 2.23 per cent. Out of 1,050 adult patients, 64 died = 6.09 per cent. Strauss states that he has administered calomel in all of his typhoid fever cases, which were quite numerous at first, in the hope to abort a case by chance (he would here state that epistaxis was a characteristic early symptom in this epidemic). The hope to abort a case of typhoid fever was, it is true, never realized; on the other hand, it was observed that those patients who had received small doses of calomel—not sufficient to purge—during the first few days of their illness, had a remarkably easy time of it, even compared with the general slight form of the epidemic. Strauss has now gradually come to the habit of giving his typhoid fever patients for a number of successive days 0.001 (0.015 grains) of calomel every two hours. If, in children, a slight diarrhea was produced, this was considered as a welcome

accessory action, as children suffering with typhoid fever frequently are constipated, and as a result suffer from violent belly-ache, which disappears at once, after a copious evacuation. Strauss expresses his conviction, based on experience, that calomel, especially in children, is a very effective, nearly specific, remedy in the treatment of typhoid fever. In explanation of the favorable action of calomel in typhoid fever, Schmey would not dwell on the disinfecting power of calomel, which has again been lately demonstrated by Strauss, as already mentioned, but would rather bring into prominence a factor, not as yet dwelt upon, as far as he knew. It is well known that in poisoning by quicksilver, when lethal, we find inflammatory conditions, and even ulcerations in those portions of the intestinal tract especially, which are well known to be the elective seat of typhoid ulcerations.

It, therefore, seems to him that the salts of quicksilver have a particular inherent affinity for that portion of the intestine, which is also attacked by preference by the typhoid poison. The question need not be considered whether, according to the views of Virchow, the phenomenon be a purely mechanical one, or whether specific secretory changes have a hand in it.

On the afternoon session of the third day, Schmey gave an abstract of a paper by P. Jacob (Berlin) on Dural infusion. Quinke, as is well known, has introduced the operation of lumbar puncture in diseases of the brain and spinal cord, and employs it for diagnostic as well as for therapeutic purposes. Lumbar puncture has truly proved itself in suitable cases a valuable auxiliary measure for diagnostic purposes. Its therapeutic value, however, leaves much to be desired. Jacob has improved this simple puncture by changing it into a method of irrigating the subarachnoidal space, so as to enhance its therapeutic value, and has named this operation dural infusion. This new method, Schmey believes, is of great importance for pediatrics, on account of the frequency and gravity with which acute and often epidemic inflammatory conditions of the central nervous system occur. Although Jacob has not as yet obtained any brilliant therapeutic successes, Schmey is, nevertheless, of the opinion, that his method points out a path which we might follow with benefit.

On the evening of the third day of the Congress, a meeting for the demonstration of specimens was also held, in which v. Ziemssen gave an excellent exhibition of trans-illumination of the thorax by means of the Roentgen rays. As a valuable improvement of the method may be mentioned a flexible fluorescence-hood, which lies closely to the contours of the body, and which was invented by v. Ziemssen.

On the last day of the Congress a series of papers were also presented, which were of great interest to the pediatricist. In the first place, Saenger (Magdeburg) discussed the protection which a healthy nose affords against germs which may be contained in the air breathed. This theme is of much importance for pediatrics, for the reason, as was observed by Schmey, that in childhood abnormal conditions of the nose are of frequent occurrence. Thus Schmey, in examining 264 school

children, met with 63 cases where the nasal passages were abnormally enlarged. The deleterious materials which may enter the respiratory passages with the air breathed are exceedingly cold and very dry air, dust, and disease-breeding micro-organisms. All this noxious material is avoided in normal nasal respiration, as this warms the entering air, moistens it sufficiently, and filters out the micro-organisms. The treatment of an abnormal narrowing of the nasal passages is sufficiently known, and is essentially operative for the removal of an abnormally wide nasal passage. Saenger has invented a small, readily worn apparatus, which he calls a nasal-obturator.

Next, v. Niesen (Wiesbaden) demonstrated the germ of syphilis discovered by him. We are here dealing with cocci, which, in the preparations shown, were ranged in the form of chain links, and were very prettily stained with carbo-fuchsin, according to Gram. It may be mentioned that v. Niesen discovered this syphilococcus in pure cultures, in the bone-marrow of children suffering with hereditary syphilis. Pure cultures of his cocci were injected into pigs and rabbits, and indurated plaques were formed at the point of injection. He then allowed these rabbits to pair, and out of ten young ones which resulted, three were altogether rotten, and showed all the symptoms of hereditary syphilis. Then followed a paper by Moritz Mayer (Simmern): "Chemical Suppuration, as Applied to the Combating of Infectious Suppuration and Local Tuberculous Processes. Mayer had obtained very favorable cures in actinomycosis and in various tubercular processes; in cold abscess; in glandular suppuration; in fungous processes of the bones and joints; in fungous ulcerations, from the application by means of tampons of sterilized diluted pyogenic remedies to a large surface; in artificially made clean wounds of the tissues, as well as on abscess-membranes. Among these pyogenic remedies may be mentioned compound tincture benzoine, balsam of copaiba, and especially balsam of Peru, and oil of turpentine. Mayer explains the manner of healing, which was elucidated by photographic exhibits, by assuming that a chemical suppuration was produced by these drugs, which successfully combated the infectious suppurative and local tuberculous processes. To this chemical suppuration Mayer ascribes the successful internal use of the balsams and their use by inhalations.

Although this explanation was not altogether satisfactory to the reporter, who rather ascribes the good effects of the balsams, and especially of Peruvian balsam, to the cinnamic acid it contains, which has an energetic bactericidal power, he has been extraordinarily interested and pleased by the results obtained by Mayer in the treatment of local tuberculous processes by Peruvian balsam, because he has, for a number of years, advocated the treatment of tuberculosis by Peruvian balsam, and cinnamic acid. After experimenting for years to obtain the Peruvian balsam in a form, which, on the one hand, rendered its internal administration easy, on the other prevented its accessory action, especially on the stomach, the commentator at last succeeded in finding a combination, in Perukognak, which meets all demands as to pleasant and easy administration, and an absence of bad after effects. Perukognak is

an alcoholic solution of Peruvian balsam, from which, by a special process, the resins which annoy the stomach, but are otherwise inert, are removed, so that the remedial constituents are left behind. One liter of perukognak, which is manufactured by the well known firm of Dallmann & Co., in Gummersback, contains the active constituents of 25 grains of Peruvian balsam.

While Schmey has, up to the present time, only employed this Perukognak internally and in the form of inhalations, in pulmonary and laryngeal tuberculosis, he intends, stimulated by the good results obtained by the reader of the paper, also to make use of it locally, in the form of tampons, applied to the surface, in localized tuberculous processes, as, for example, in tuberculous ulcerations. After the brilliant results obtained in the internal treatment by Perukognak, of pulmonary tuberculosis, he does not in the least doubt, especially after hearing Mayer's paper, that the local application of Perukognak will also favorably influence local tuberculous processes.

It goes without saying, that the hygienic-dietetic measures which have been employed so successfully, especially by Brehmer and Dettweiler, in the treatment of phthisis, must not be neglected.

Laquer (Wiesbaden), then discussed the influence of a milk diet on the excretion of sulphuric acid. He found by studying metastasis, that the lowering of the amount of sulphuric acid, which is found where a milk diet is adhered to, is based on the amount of casein contained in the milk. Hilbert (Koenigsberg), discussed the part played by the streptococci in diphtheria. Cases of pure forms of diphtheria, namely, where the diphtheria bacillus only was found in the deposit, are quite rare; as a rule, the streptococcus also enters into the formation of the membrane, and increases the poisonous properties of the diphtheria bacilli, and in some cases their own virulence is increased to such an extent by their conjunction with the latter, that they enter the economy, thereby causing inflammation of internal organs and septicemia. The occurrence of this latter complication may be avoided by the timely injection of antitoxin. In the discussion, Petruschky pointed out that we probably meet more frequently with true diphtheria than would appear from Hilbert's statement. These cases of true diphtheria are accompanied by a slight rise in temperature only, under 39°; on the other hand, they are marked by an extraordinary frequency of the pulse rate, dangerous heart failure, and a great tendency to infection. The following three properties of the fatal presence of the diphtheria bacillus were observed:

(1) A tendency to the occurrence of necrosis; (2) the formation of toxins, which exert a grave influence on the heart; (3) a tendency to epidemic propagation.

Glück (Berlin) mentioned that it was of enormous importance to isolate patients convalescing from diphtheria, for the reason that diphtheria bacilli were yet present in the throat, even when the deposit had altogether disappeared. It was only since this rule was strictly enforced, in the Kaiser und Kaiserin Friedrich Krankenhaus, in Berlin, on the recommendation of Baginsky, that house epidemics of diphtheria were avoided in this institution.

PEDIATRICS

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ORIGINAL ARTICLES

THE PATHOLOGY OF DIPHTHERIAL PARALYSIS.*

A PAPER BASED ON THE EXAMINATION OF SIX CASES
OF THAT DISEASE BY MARCHI'S METHOD.

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THE pathology of diphtherial paralysis, although well established from experimental evidence, is from the side of human pathology yet deficient, and it has been shown that the method applicable to tissue obtained from experimental sources, and which has been characterized as "the only method which is of value" when applied to normal tissue which has undergone *post-mortem* change, gives results exactly similar to those obtained by pathological changes, and is therefore unfortunately inapplicable for the purpose of demonstrating degeneration in nervous tissue obtained from the *post-mortem* room.¹

The same objection might be raised to the use of Marchi's fluid; it has, however, been shown that the characteristic appearance of degeneration is not to be produced by simple *post-mortem* change.²

Comparatively few examinations have been made on cases of diphtherial paralysis by the Marchi method, and it was with this object in view that some eighteen months ago I started the investigation of the nervous system of such cases of diphtherial paralysis as I could obtain, and I would here ac-

*Read in the Section of Diseases of Children at the Annual Meeting of the British Medical Association, held in Edinburgh, July, 1898.

knowledge my indebtedness to those physicians under whose care the cases came, namely, Sir Dyce Duckworth, Sir William Gowers, Dr. Barlow, Dr. Lees, and Dr. Penrose, for their kind permission in allowing me to make use of the clinical notes of the cases—for, saving in two of the cases (No. 2 and 5), I did not see the patients before death, and the pathological examination was completed before the clinical notes were examined.

Method of Examination.—After removal from the body, the brain, spinal cord, and nerves were hardened in Müller's fluid, small pieces being first removed from the cervical, dorsal, and lumbar region of the cord, and hardened in formalin for examination by Nissl's method. Some of the posterior root ganglia were also placed into the same solution for examination by the same method. After hardening in Müller's fluid for variable periods depending on the time at the author's disposal (never less than thirty days), small pieces were removed from various levels of the cord and medulla, and put into Marchi's fluid for five days, were washed in tap water, and after being treated in the usual manner, were imbedded and cut in celloidin.

The cranial nerves, the vagi, the phrenics, the spinal roots—anterior and posterior—the ganglia of the posterior roots, and the peripheral nerves, were treated in a similar manner and cut both in a longitudinal and transverse section.

Specimens were mounted in the usual manner in Canada balsam without further staining; others were stained by Pal's method.

NATURE OF CHANGES FOUND.

1. *Nissl's Method.*—The spinal cord in the cervical, dorsal, and lumbar region, and the posterior root ganglia were examined by the above method. No change could be demonstrated in the cells, either of the anterior horn or of the posterior root ganglia; the granules, and the prolongations of the cells of the anterior horn appearing perfectly normal in size and distribution.

2. *Marchi's Method.*—The character of the changes found by this method were as follows:

(a) In the spinal cord the anterior root fibres, as they pass through the white matter, are seen to have undergone degeneration, as manifested by the number of black granules in their

course. As they enter the grey matter these fibres are no longer collected in bundles; they become scattered, and pass in all directions between the cells of the anterior horn. In the posterior region of the cord the process is not nearly so easy to trace, owing to the interstitial fat that is, normally present in this region. The number of degenerated fibres is, however, greater in the postero-external column than in the postero-internal. The vessels in the grey matter are engorged.

(b) The spinal roots.

(1) In the anterior roots the myelin sheath of the nerve can be seen broken up into granular masses composed of very fine globules of fat. Some of these are fused together, and form larger masses; this appearance seems to be similar to that found in a peripheral nerve after section.

(2) In the posterior roots exactly the same change is found, only usually less marked than in the anterior roots. Figs. 3 and 4 or 4 and 5.

(c) The posterior root ganglia. As stated above, no change could be found in the cells of these ganglia, but the fibres on both sides of the ganglion exhibit characteristic degeneration of the nerve fibres.

(d) The peripheral nerves. The changes found in the main trunks of the peripheral nerves and in the fine branches, present the following characteristics: The nerve fibre is swollen up, and the myelin sheath appears to be filled up with fine fat globules (Figs. 1 and 2). In certain spots these have fused together to form larger masses of fat; in the later stage the myelin seems to be broken up into oval masses, which contain globules of various sizes. The method employed is not one by which one can make certain that a fibre is affected in its whole length, but from examination of sections which have cut a single fibre parallel for a considerable distance, it would seem that the degeneration does not extend along the whole length of one fibre at the same time. The changes found are similar to those found after section of a nerve, and in the most marked case were less marked than in the nerve fourteen days after section, and more marked than in the nerve of a dog seven days after section.

TABLE OF CASES.

Case 1, Girl, aged 2½ years. Diphtherial paralysis. Duration 43 days.

Case 2, Boy, aged $2\frac{1}{4}$ years. Diphtherial paralysis. Duration uncertain.

Case 3, Boy, aged 5 years. Diphtheria. Duration fifteen days.

Case 4, Boy, aged 3 years. Diphtherial paralysis. Duration 60 days.

Case 5, Girl, aged 4 years. Diphtherial paralysis. Duration 50 days.

Case 6, Boy, aged $1\frac{3}{4}$ years. Diphtherial paralysis. Duration 100 days,

METHODS OF EXAMINATION.

1. Marchi's method.
2. " Pal's method.
3. Nissl's method.

Parts examined:

1. Cranial nerves.
2. Spinal cord.
3. Anterior and posterior roots.
4. Posterior root ganglia.
5. Vagus.
6. Phrenic.
7. Nerves to the upper extremity.
8. Nerves to the lower extremity.

Case I.—L. W., girl, aged $2\frac{1}{2}$ years, admitted to the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Lees, on January 26th, with well marked diphtheria, having been taken ill two days previously; 2,000 units of anti-toxin were given on the 26th, and 2,000 units on the 28th, the child being apparently well by February 11th. On March 2d the knee jerks were absent, and the child died on March 9th, forty-three days after the onset of the disease. Necropsy twenty-four hours after death.

PATHOLOGICAL EXAMINATION.

1. Nissl's method:

The cells of the spinal cord and of the posterior root ganglia appear to be normal.

2. Marchi's method:

Cranial nerves.—Degeneration was found to a greater or less extent in the 3d, 4th, 6th, 11th, 12th, and possibly very slight change in the 7th.

Spinal cord.—No change could be found in the spinal cord.

Spinal roots.—Degeneration was present in both the anterior and posterior roots of the 8th cervical.

Posterior root ganglia.—Degeneration was present on both sides of the posterior root ganglion to about an equal extent.

Peripheral nerves.—Degeneration was present in the brachial plexus, the phrenics, the anterior crural, and to a less extent, in the vagi.

3. Pal's method:

By this method all the parts above examined appeared normal.

Case II.—J. K., boy, aged $2\frac{1}{4}$ years, admitted to St. Bartholomew's Hospital, under the care of Sir Dyce Duckworth, with diphtherial paralysis. History of diphtheria uncertain; onset of weakness February 10th. February 14th, squint, loss of knee jerks, incoördination of the movements of the hands. The child died February 19th. Duration of disease uncertain. Necropsy twenty-four hours after death.

PATHOLOGICAL EXAMINATION.

1. Nissl's method:

The cells of the anterior horns examined by this method appear to be perfectly normal.

2. Marchi's method:

Cranial nerves.—Degeneration was present in the 3d, 4th and 11th nerves, and possibly also in the 7th.

Spinal cord.—Degeneration of the fibers within the spinal cord, both anteriorly and posteriorly, is fairly well marked at the level of the 6th cervical and 5th lumbar; at the level of the 6th dorsal the cord appears normal.

Spinal roots.—The spinal roots, both anterior and posterior, show degeneration both in the cervical, dorsal, and lumbar region; less marked in the lumbar and dorsal region than in the cervical, and less in the posterior roots than in the anterior.

Peripheral nerves.—Degeneration is present to a marked degree in the nerves of the brachial plexus, the anterior crural,

and the phrenics; the vagus, however, presents but little change.

3. Pal's method:

The above parts examined by this method appeared to be normal.

Case III.—A. G., boy, aged 5 years, admitted with diphtheria to the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Barlow. The child had been taken ill on July 12th; when seen on July 14th he had well marked diphtheria; 2,000 units of antitoxin were given. The child improved till July 26th, when the temperature began to rise, and he died July 29th without any definite signs of paralysis. Necropsy thirty-six hours after death.

PATHOLOGICAL EXAMINATION.

This was negative, both with regard to the cranial nerves and the spinal cord. Examination by Nissl's method was unfortunately omitted.

Case IV.—H. B., boy, aged 3 years, admitted to the National Hospital, Queen Square, under the care of Sir William Gowers, with diphtherial paralysis, having had a slight attack of diphtheria two months previously. He had had unsteadiness for two weeks, and on admission had a very ataxic walk, nasal voice, regurgitation of fluid, loss of knee jerks, and soon after admission paralysis of the diaphragm. He died three days later. Duration sixty days. Necropsy three hours after death.

PATHOLOGICAL EXAMINATION.

1. Nissl's method:

Omitted.

2. Marchi's method;

Spinal cord.—The degeneration within the spinal cord is fairly well marked in the cervical and dorsal region, but most marked in the lumbar.

Spinal roots.—The anterior and posterior roots are affected to about an equal extent.

Posterior root ganglia.—The fibers on both sides of the ganglion are affected to a very marked degree.

Peripheral nerves.—The peripheral nerves show comparatively little change, the cauda equina and the right phrenic show some degenerated fibers, but the left phrenic, ulnar and anterior tibial show no change.

3. Pal's method:

The above parts examined appear to be normal.

Case V.—G. B., girl, aged 4 years, was admitted to the Hospital for Sick Children, Great Ormond Street, under the care of Dr. Barlow, on March 1st, with an indefinite history of diphtheria, in the middle of January, followed by an attack on February 11th of loss of power on the right side without loss of consciousness. On admission, there was right hemiplegia without aphasia, nasal voice, articulation very defective, paralysis of the palate, loss of knee jerks and paralysis of the diaphragm. The child died on March 1st. Duration fifty days. Necropsy twenty-four hours after death. Softening was found in the left lenticular nucleus.

PATHOLOGICAL EXAMINATION.

1. Nissl's method:

Omitted.

2. Marchi's method:

Spinal cord.—No degeneration could be found in the spinal cord, in the roots or in the pyramidal tracts.

Peripheral nerves.—The right and left vagus and the right and left phrenics appeared to be normal.

3. Pal's method.

The parts above examined appeared normal.

Case VI.—J. H., boy, $1\frac{3}{4}$ years, was admitted to the Hospital for Sick Children, Great Ormond Street, under Dr. Penrose, with diphtherial paralysis, on January 5th, having suffered from diphtheria three months previously. Antitoxin had not been given. He had well marked paralysis, and death took place on January 10th. Duration 100 days. Necropsy forty-eight hours after death.

PATHOLOGICAL EXAMINATION.

1. Nissl's method:

By this method the cells of the anterior horn appear to be

normal in sections taken at the level of the 5th cervical, 5th dorsal, and 5th lumbar.

2. Marchi's method.

Cranial nerves.—Of the cranial nerves examined, the 6th, 9th, and 10th showed marked change.

Spinal cord.—There is very marked degeneration in the anterior roots as they pass through the white matter of the cord, the posterior roots seem to be even more extensively affected, and the degeneration can be traced into the posterior external columns of the cord where it becomes diffuse. The dorsal region of the cord appears to be normal, the lumbar



FIG. 1.—Longitudinal Section through the 4th cranial nerve, showing marked degeneration.—Case II.

cord at the level of the 2d lumbar root shows increased vascularity, and some degenerated fibres in the gray matter.

Spinal roots.—At the level of the 2d cervical the degeneration of the roots is very much less marked than at the level of the 5th cervical, at which level the degeneration is more marked in the posterior roots than in the anterior. At the level of the 2d dorsal the roots appear normal, while at the level of the 2d lumbar there is degeneration of the anterior roots. Comparing the anterior and posterior roots taken at the

level of the 3d cervical segment, one finds that the anterior root is more affected than the posterior, although both are fairly extensively involved.

Peripheral nerves.—Both vagi and phrenics show marked degeneration, as well as the nerves in the brachial plexus.

3. Pal's method:

No change could be demonstrated in the cord, spinal roots or peripheral nerves by this method.

SUMMARY OF CASES.

Six cases have been examined. All were children under the age of 6 years; 5 were cases of diphtherial paralysis, 1 was a case of death 15 days after diphtheria, without any sign of diphtherial paralysis.

The duration of the longest case from the time of infection was 100 days, and the shortest 43 days (excluding the case of diphtheria, which only lasted 15 days).

Of the 6 cases, 4 gave a positive result—that is, Nos. 1, 2, 4, 6—and showed a parenchymatous degeneration of the nerves. Case III. (death on the 15th day) gave a negative result, and also Case V.—a case of diphtherial paralysis with hemiplegia, due to softening of the left lenticular nucleus, death having occurred on the fiftieth day after infection. This case would appear to be altogether anomalous, and it is difficult to understand why the nerves examined should show no change when, clinically, the case was so well marked; and also that in a case of hemiplegia existing for 21 days no descending degeneration could be demonstrated in the spinal cord by Marchi's method.

The changes were most marked in Case VI., a boy who died 100 days after infection.

Of the 4 cases in which changes in the nerves were found, one or more of the ocular nerves were affected in 3; in the fourth case no examination was made.

In 3 cases the spinal cord showed degeneration of some fibres in the grey matter, the cells of the anterior horns appearing to be normal by Nissl's method. In all 4 cases the anterior and the posterior roots were affected, and in the 2 cases in which examination was made, degeneration was found on both sides of the posterior root, ganglia the cells of the posterior root ganglia appearing normal by Nissl's method.

The phrenic nerves were affected in all 4 cases, the vagi in 2. The other peripheral nerves were affected to a greater or less extent in all 4 cases.

The evidence obtained from the examination of the above cases points to a parenchymatous degeneration of the nerve. That the affection is primarily peripheral would seem probable from the fact that the fibres on both sides of the posterior root ganglia are involved, and the fact that by Nissl's method the cells of the anterior horn appear perfectly normal. It has, however, lately been shown by Mouravjeff that changes in the cells of the anterior horns occur during the first weeks after infection, whereas the parenchymatous change in the nerves was most marked—five to six weeks after infection—at which time the cells in the anterior horns had recovered, or had undergone atrophy, so that in the present series of cases the normal appearance of the cell cannot be used as an argument against a primary cell infection.

TABLE OF CASES.

	Case I., aged 2½. Duration, 43 days.		Case II., aged 2¼. Duration, uncertain.		Case III., aged 5. Duration, 15 days.		Case IV., aged 3. Duration, 60 days.		Case V., aged 4. Duration, 50 days.		Case VI., aged 1½. Duration, 100 days.	
	R.	L.	R.	L.	R	L	R.	L.	R	L	R.	L.
Cranial nerves.....1st	o	o	o	—	o	—	—	—	—	—	—	—
" ".....2nd	o	o	o	—	o	—	—	—	—	—	—	—
" ".....3rd	x	x	x	—	x	—	—	—	—	—	—	—
" ".....4th	xx	—	xxx	xxx	o	—	—	—	—	—	—	—
" ".....5th	o	o	o	—	o	—	—	—	—	—	—	—
" ".....6th	xxx	xx	o	—	o	—	—	—	—	—	xxx	—
" ".....7th	x	o	o	—	x	—	—	—	—	—	—	—
" ".....8th	o	o	o	—	o	—	—	—	—	—	—	—
" ".....9th	o	o	o	—	o	—	—	—	—	—	xxx	—
" ".....10th	o	o	o	—	o	—	—	—	—	—	xxx	—
" ".....11th	xxx	—	x	—	o	—	—	—	—	—	—	—
" ".....12th	xxx	xxx	—	—	—	—	—	—	—	—	—	—
Spinal cord, 5th cervical.....	o	—	xx	—	o	—	xx	—	o	—	xxx	—
" 5th dorsal.....	o	—	o	—	o	—	x	—	o	—	o	—
" 5th lumbar.....	o	—	xx	—	o	—	xxx	—	o	—	xx	—
Anterior nerve roots.....	xxx	—	xxx	—	—	—	xx	—	—	—	xxx	—
Posterior nerve roots.....	xx	—	xx	—	—	—	xx	—	—	—	xx	—
Nerves in posterior root ganglia...	xx	—	—	—	—	—	xxx	—	—	—	—	—
Vagus.....	xx	x	o	—	—	—	—	—	o	—	xxx	xxx
Phrenic.....	x	xx	xxx	xxx	—	—	xx	xx	o	o	xxx	xxx
Nerves of upper extremity.....	xxx	xxx	xxx	xxx	—	—	x	x	o	o	xxx	—
Nerves of lower extremity.....	—	xxx	xxx	xxx	—	—	o	—	—	—	—	—

Explanation—
 x Slightly affected.
 xx Moderately affected.
 xxx Markedly affected.
 — Not examined.
 o Not affected.

DIGEST.

In 1862 Charcot and Vulpian demonstrated a fatty and granular degeneration of the nerves of the soft palate, in a woman who died of diphtherial paralysis. In 1864 Weber published two cases of diphtherial paralysis, in which microscopical examination of the brain and spinal cord failed to reveal any lesion. In 1867 Bühl, in a similar case, found extravasations of blood into the brain, and also that the anterior and posterior horns were increased in size. In 1868 Clos described, in a case



FIG. II.—Longitudinal section of right anterior crural nerve. Case II.

of diphtherial paralysis, changes in the nerves similar to those produced after section of the nerve. In 1869 Lorain and Lépine described a similar neuritis. In 1871 Oertel found in a case of diphtherial paralysis, capillary hemorrhages in the dura mater of the cranium and spinal cord, as well as in the sheath of the peripheral nerves, and also an inflammatory condition in the anterior horns. In 1872 Bailly asserted that the paralysis depended sometimes on a lesion of the peripheral

nerves; sometimes, also, on an affection of the muscles. In 1872 Liouville described degeneration in the phrenic, in a case of diphtherial paralysis of the diaphragm. In 1872 Leyden described an ascending neuritis (neuritis migrans) which may ascend to the nerve centres. In 1875 Roger and Damaschino described changes in the nerves and anterior roots in four cases of diphtherial paralysis. In 1876 Pierret described an exudation in all points like diphtherial membrane on the spinal meninges and on the perineurium of the neighboring roots. In 1876 Vulpian denied this, and asserted that the only lesion he had seen in two cases was rarefaction of the connective tissue of the grey matter, and that the cells of the anterior horn became more globular in shape, their contents more homogeneous, and the nucleus could not be seen. In 1877 Sanné relates several cases in which no lesion has been found in the nervous system, and concludes that at present the changes are not constant enough to designate them as due to diphtheria. In 1878 Déjerine examined five cases. He noted two lesions, the one in the nerves, the other in the grey matter of the spinal cord.

With regard to the nerves, the changes are such that they resemble those which occur after section of a nerve. The changes in the anterior horns are that the cells are globular, dull, deprived of their prolongations, the nucleus and nucleolus being very little apparent. There is an increase of the neuroglia, and the vessels are congested. The conclusions of the author are:

1. A lesion of the anterior roots, similar to that observed after section of a nerve; this lesion being constant.
2. The alteration of the anterior roots has always been in correspondence with the paralysis observed during life.
3. The degree of alteration in the roots has always been in correspondence with the duration of the paralysis.
4. The posterior roots have never presented this lesion.
5. The alteration in the roots is secondary to the lesion in the spinal cord.
6. The lesion in the spinal cord is probably inflammatory in nature, affecting the grey matter, and is both interstitial and parenchymatous.

In 1880 Quinquaud observed in two cases lesions similar to those described by Déjerine; he described an acute myelitis in

the lumbar region, and noted that some of the cells were filled with yellow granules. In 1881 Meyer examined a case of diphtherial paralysis in a man aged 17, in whom infection had occurred 50 days previously, and marked paralysis had existed for 21 days.

The method used was to tease the nerve on osmic acid, 1 per cent., and counterstain with picrocarmine. By this method degeneration was shown in the phrenic, the nerves of the lower extremities—the nerves most affected being those of the diaphragm and the abdominal muscles. The skin nerves

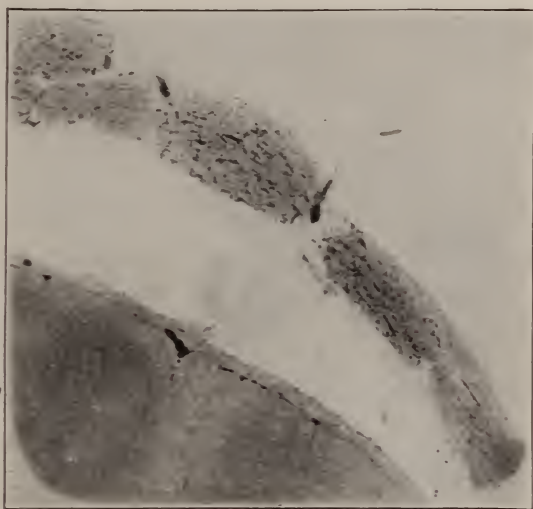


FIG. III.—Posterior nerve root, cervical region, showing marked degeneration. Case VI.

of the lower extremities were also affected, but less than the muscular branches; this might, however, depend on the greater thickness of the sheath of Schwann in these nerves. The motor oculi nerve and the sixth were affected. Strabismus was not present in the case, and degeneration of both may account for this. Some degeneration was found in the finer branches of the fifth nerve, in the seventh, in the ninth, and vagus, but less than in the phrenic and glossopharyngeal. The superior and recurrent laryngeal were also affected, as well as the spinal accessory and hypoglossal. No degeneration was found in the sympathetic.

The larger nerves were examined—the sciatic, the radial, ulnar, and median, but showed less degeneration than the finer branches. It was also noted that the finer nerve fibres were more affected than the larger. The spinal roots, both anterior and posterior, also showed a parenchymatous neuritis, and although the sheath of the nerve was destroyed, the axis cylinder often remained intact; the process being more marked in the lumbar and cervical region than in the dorsal. The spinal ganglia themselves appeared to be normal; the nerves to and from the ganglia, however, showed degeneration, though it

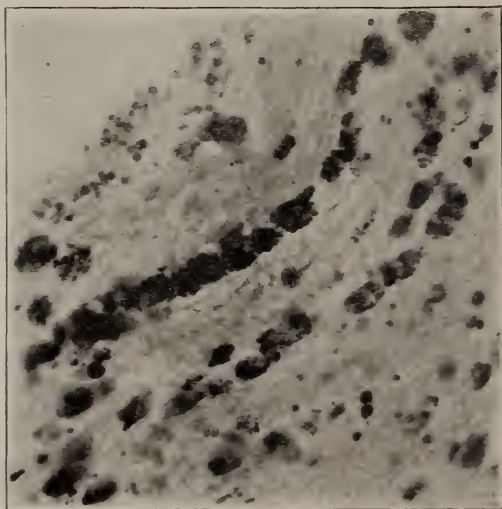


FIG. IV.—Posterior nerve root to show character of degeneration.—Case VI.

could not be said that it was more marked on the one side than the other. No alteration could be found in the spinal cord; the vessels were dilated, but there was no sign of myelitis. A few cells were somewhat swollen and granular, and these were mostly in the anterior horn.

In 1881 Abercrombie examined two cases of diphtherial paralysis, and denied the alteration described by Déjerine. He noted only a slight diminution of the cells of the anterior horn. In 1881 Gaucher examined two cases; in the first the medulla, spinal cord, spinal roots, and median nerve, were found to be normal; in the second the anterior roots only of the lumbar

region were affected. The nerves were teased in 1 per cent. osmic acid and counterstained with picrocarmine.

In 1883 Kidd described an increase in the connective tissue of the spinal cord and atrophy of the cells of the anterior horn most marked in the dorsal region, less in the cervical, and slight in the lumbar. In 1884 Sanné concluded that the primary cause of diphtherial paralysis was due to a central lesion. In 1885 Mendel found in a child who had died of diphtherial paralysis a congestion of the nerve centres and a Wallerian degeneration of the two oculo-motor nerves, the nerve cells themselves appearing normal. In a second case congestion and hemorrhage into the spinal cord and an interstitial and parenchymatous neuritis of the peripheral nerves. In 1886 Pitres and Vaillard, in a case of diphtherial paralysis in a man aged 37, described and figured in the radial, median, and the anterior and posterior roots, a typical degeneration of the myelin sheath; the axis cylinder remaining in the earlier stages of the disease intact. The nerves were teased out in 1 per cent. osmic acid and stained with ammonium picrocarmine. In 1888 Bristowe described in a child who died of diphtherial paralysis (1) normal condition of the nerve cells; (2) degeneration of the oculo-motor nerves; (3) hyperemia and hemorrhage into the interpeduncular space.

In 1890 Babinski expressed the opinion that diphtherial paralysis was due to neuritis affecting the nerve fibres around the axis cylinder, and that Wallerian degeneration was much more rare. In animals poisoned by diphtheria he was unable to demonstrate any lesion, although the paralysis had been very marked.

In 1892 Martin investigated experimentally the effects of an albumose obtained from the spleen and blood of persons dead of diphtheria, injected subcutaneously into rabbits. All parts of the nervous system were examined, "the only method which is of value in the study of peripheral nerve degeneration is staining the fresh nerve with osmic acid, and counterstaining with carmine to bring out the nuclei and axis cylinder."

The so-called "motor nerves," namely, those passing directly into a muscle, were examined, and showed breaking up of the white substance of Schwann, which had become thin and but little stained by the osmic acid. At a lower point in the nerve the white substance had disappeared altogether, and

still lower the white substance was granular and broken up. All parts near the origin of the nerve were quite normal. The primitive sheath was intact, the axis cylinders were often intact, even when the white substance had completely disappeared. There was no interstitial change, no increase of the nuclei; the process is one of degeneration of the nerve fibre. The sensory nerves, namely, the long saphenous, were also examined, and showed a similar change to that described in the motor nerve. The sympathetic nerve also showed a degeneration in the transverse direction above the lesion the nerve was normal, below the nerve was degenerated. The central nervous system examined by Marchi's, Weigert's, and Pal's methods showed no change in the nerves or cells. The nerve roots were examined, and degeneration was found only in one, namely, an anterior root in the dorsal region. The posterior roots were normal as well as the spinal ganglia.

The fact is clear, therefore, that the degeneration affects the terminals of the motor branches primarily, and not the main trunks. Martin also examined two cases.

1.—A child, aged 5 years, who died on the fifth day of pharyngeal and laryngeal diphtheria; the right phrenic showing degeneration such as has been described in animals.

2.—A male, aged 19, who died on the twenty-seventh day, of the disease; the paralysis of the palate being noted on the ninth day. Degeneration was found in one phrenic; in the branches to the right and left vastus internus, and in the nerves to the right and left vastus externus, and in the nerves of the palate.

It is clear from the changes observed in the nerves as a sequence to the injection of diphtherial albumose, that the condition is one of simple degeneration, affecting first the white substance of Schwann, which breaks up and disappears, and later the axis cylinders, which become attenuated and finally ruptured, so that below the rupture of the fibre undergoes Wallerian degeneration.

In 1892 Arnheim examined the nervous system of eight children who had died of diphtherial paralysis, and found that the alterations in the cord were slight, whilst the degeneration of the peripheral nerves was marked. In 1893 Stcherback observed in rabbits and guinea-pigs hemorrhages into the

membranes of the spinal cord, in the gray matter poliomyelitis degenerative changes in the nerve roots, and neuritis of the peripheral nerves.

In 1892 Hochhaus failed to find any alteration either of the central or peripheral nervous system. In 1894 Enriquez and Hallion, by experimental injection into animals, found hemorrhage into the gray matter of the cord, foci of myelitis in the white matter, and destruction of the cells of the anterior horn. In 1894 Bikeless examined a case of diphtherial paralysis in a man, aged 40, by Marchi's method. The sciatic, brachial plexus, phrenic, and vagus, all appeared normal. In the spinal cord, however, in the region of the posterior roots, he found a mass of fat granules. He considers that this degeneration may account for the ataxia which is often present.

In 1895 Preiz examined three cases of diphtherial paralysis by Nissl's and other methods. He found atrophy of the cells of the anterior horn, hemorrhage into the gray matter, and degeneration of the peripheral nerves and of the anterior and posterior roots. He describes peculiar "nerve buds" on some of the finer fibres. He believes that the central and peripheral portions of the nervous system are affected at the same time.

In 1895 Hasche examined the case of a boy, 9 years old, who died six weeks after the commencement of his illness. The tissues were examined by the following methods: Carmine, nigrosine, hematoxylin, Weigert-Pal, and Nissl; the nerves being teased with 1 per cent. osmic acid. He failed to find any lesion.

In 1895, Crocq, experimenting on rabbits, by injection of cultures in the diphtheria bacillus, and also of the toxin, showed that the cells of the anterior horns of the spinal cord became swollen, the staining irregular, and their nucleus and prolongations disappeared; the neuroglia and ependyma proliferate, the nerve cells atrophy, and their place is occupied by sclerotic tissue. The white substance is very rarely affected. In the nerves the poison produces a degeneration, irregularity of the contour of the nerves, segmentation of the myelin, multiplication of the nuclei, and often the axis cylinders become broken. In the later stages, the myelin is reduced to fine drops of fat, the axis cylinders disappear, and the nuclei become more abundant. Lastly, the myelin is absorbed. This degen-

eration is more marked in the anterior roots than in the posterior. The cranial nerves are not affected. The changes noted in the early days are changes in the anterior horns, while the changes in the peripheral nerves are not marked till about the thirteenth day, and become progressively so till the thirty-ninth day. The diphtherial poison produces in the rabbit a primary myelitis and a secondary neuritis. In man diphtheria seems to produce two varieties of paralysis, which differ considerably—the one remains localized to the mouth, nose, eyes, larynx and pharynx, the other is general, and may attack the whole body, and starts usually in the legs. One may suppose that the first is due to a primary peripheral neuritis, and the second, as in the rabbit, to a primary myelitis and a secondary neuritis.

In 1896 Courmont, Doyen and Paviot examined the nervous system of the frog, dog, and horse, poisoned by diphtheria, and found changes only in the peripheral nerves, the cells of the anterior horn appearing normal. In 1896 Sano, in a case of diphtherial paralysis of two months' duration, found a neuritis which was segmentary and periaxillar in nature; some slight change was found in the cord, but the dominant lesion was the neuritis. In 1896 Ceni examined three cases of diphtheria, and only in one, which had lasted 11 days, was he able to demonstrate any lesion; the other two appeared normal. In animals the effects are best marked in those that die slowly after 12 to 14 days.

In 1897 Henschel described a disseminated sclerosis in a girl aged 14, who died $2\frac{1}{2}$ months after infection. Degeneration of the nerves of the lower extremities was more marked than in the upper extremities. In 1897 Mouravjeff, experimenting with guinea-pigs and examining the nerves by teasing them with 1 per cent. osmic acid and by Marchi's method, and the cord by Nissl's method, found the first lesion which appeared was an alteration of the cells of the anterior horn. In the animals which lived for a period of five weeks and more, a marked degeneration of the nerves and the anterior and posterior roots occurs; the cells of the anterior at this period appeared almost normal.

In 1898 Thomas examined the pneumogastric nerve in 25 cases of diphtheria. He found degeneration in nearly every case, it being described as "marked" as early as the

sixth day after infection. The examination was carried out by Marchi's method, by hematoxylin, and by methylene blue.

SUMMARY.

Although various views have been held with regard to the pathology of diphtherial paralysis, it is at the present time generally recognized that the lesion most commonly found is a parenchymatous degeneration of the myelin sheath of the nerves, and Martin has shown that this condition affects primarily the finer nerve branches. More recently the work of Mouravjeff would tend to show that the primary alteration occurs in the cells of the anterior horn, and this was demonstrated by Nissl's method—a method which Martin did not use. The same condition had been previously described by Crocq, though he describes the primary condition as a myelitis. In the experiments of Mouravjeff the animals which had been allowed to live for the longest time after infection showed well-marked changes in the peripheral nerves, although no changes could be demonstrated in the granules of the nerve cells. Some of the cells may, however, have undergone atrophy. In the present series of cases the cells, not only of the anterior horn but also of the posterior root ganglia, appeared normal. It may, however, be that the cells in these cases had had time to recover.

With regard to the affection of the posterior roots, Meyer, in 1881, showed that they were degenerated, and also that this degeneration existed on both sides of the spinal ganglion. This has been noted again, more recently by Preiz, Crocq, and Mouravjeff, and among others by Bikeles, who describes the occurrence of masses of fat globules in the posterior root at its entrance into the spinal cord; this, however, is a normal condition certainly in children, and probably to a lesser extent in adults, and hence localized granules of fat in this region should not be regarded as evidence of degeneration.

The cranial nerves have been found affected by Meyers, Bristowe, and others; Crocq, however, failed experimentally to find any degeneration. The nerves described as being affected are the third, fourth, fifth, sixth, seventh, eighth (Moos), ninth, tenth, eleventh, twelfth.

In conclusion, then, it is probable that the dominant lesion

in diphtherial paralysis is a parenchymatous degeneration of the myëlin sheath of the nerves, and that this degeneration affects both motor and sensory fibres alike.

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POST LARYNGEAL SUPPURATION.

By FRANCIS HUBER,
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IN discussing the subject of retro-pharyngeal abscess, Dr. Holt says: "Similar abscesses from suppurative inflammation of other lymph nodes in the neighborhood of the pharynx may occur. I have recently seen one between the epiglottis and the tongue."

The extreme rarity of the condition induces me to present the following case, though it occurred in a much older child than Holt's. Nothing in the history or subsequent course threw any light upon the etiology in this instance.

Through the courtesy of Dr. Browd, with whom I saw the case in consultation, I am enabled to present the following case:

On the third day of her illness I was requested, about 11 P.M., to see a girl 8 years old, with a view to perform intubation if necessary. We found her lying on her left side, head elevated by several pillows, and somewhat extended. Considerable dyspnea present, inspiration greatly impeded and stridulous in character, expiration less interfered with. Cough croupy, with mucus expectoration. Voice husky; no aphonia, great difficulty in swallowing; not restless. When asked to sit up, the head remained extended and rigid. Movements of head possible, but painful. No glandular enlargement at angle of jaw, opening of mouth attended by considerable pain. External examination of neck revealed the larynx unduly prominent; the thyroid cartilages did not seem to be enlarged. On either side an enlarged gland, about the size of an almond, could be made out distinctly, the left more prominent and larger than the other. No edema, redness or boggiess visible externally. Examination of the fauces failed to show any diphtheritic process, no retro or lateral pharyngeal abscess, or edema of the glottis on digital exploration. The tissues at the base of the tongue were infiltrated, and the natural depression or sulci obliterated. Larynx not tender, no pains elicited by

lateral pressure over cartilages; moderate pressure backward painful and attended with increase in dyspnea. Temperature and pulse elevated.

We were thus confronted with an acute condition, attended by dyspnea, croupy cough with mucus expectoration, great difficulty in deglutition, fever, retracted and rigid head, and prominent thyroid cartilages.

By a process of elimination and exclusion, we arrived at a probable diagnosis of some inflammatory process in the connective tissue posterior to the larynx, going on to suppuration.

In view of the rare condition and the clinically interesting nature of the case, the following brief notes kindly taken by the attending physician, Dr. Browd, are added:

On Thursday the child, 8 years old, was brought to the office, suffering from enlarged tonsils with swelling of glands. Ordered tr. fr. chlor. and cold applications.

Monday, summoned in a hurry. Patient worse, cough croupy and wheezing with evidences of suffocation. Thyroid cartilage prominent. T. 103.5, R. 40, P. 126. No pulmonary trouble.

Tuesday, condition worse; respiration more labored; swallowing difficult. T. 103, P. 126, R. 46.

Tuesday evening. Signs of suffocation more marked, but not sufficient to warrant operative interference. Ordered inunctions of ung. hydrarg. and inhalations of turpentine steam.

The next day breathing more labored and larynx more prominent, cough stridulous. Though somewhat worse during the night, the following day the child was reported considerably better, and the mother stated that while the child was at a worse stage during the night and appeared on the verge of suffocation, Jennie suddenly expelled; considerable amount of pus. This has continued since with each coughing spell. T. 102.5, P. 116, R. 30.

Digital exploration shows less swelling at base of tongue, and the larynx not so prominent externally. Pot. chlorat. gr. i hourly in water.

From this time on (eighth day of trouble), the temperature fell slowly and all symptoms improved, so that she was discharged fully restored to health three days later.

A few remarks may be of interest. Though the dyspnea

was paroxysmal in character and now and then somewhat alarming, intubation was not justified. Should a similar case present itself again, I should be inclined to favor an incision in the median line over the larynx, with careful direction along the side, thus possibly relieving the tension and perhaps striking the abscess. Scarification of the tissues at the base of the tongue when infiltrated as in this case may perhaps give some relief. The absence of aphonia excluded a membranous deposit in the larynx, as also a catarrhal laryngitis; digital palpation did not show any edema of the ary-epiglottic folds or glottis. The undue prominence of the larynx and the increase in the distress upon pressure backward, with the infiltration of the parts at the base of tongue posteriorly on the right side, lead us, in view of the acute character, to the diagnosis of an extra laryngeal suppuration.

The treatment was symptomatic. Left to nature, the case fortunately terminated favorably by rupture; the exact site could not be made out positively.

209 East 17th Street.



REPORT OF AN UNUSUAL CASE OF CONVULSIONS
IN A CHILD FOUR YEARS OLD, EXTENDING
OVER FOUR DAYS, WITH ULTIMATE
RECOVERY.

By LOUIS FISCHER, M.D.,

Professor of Diseases of Children in the New York School of Clinical
Medicine.

I WAS recently summoned to see a child with a history of having had convulsions every fifteen or twenty minutes for twenty-four hours preceding my visit. The history showed that the child had been in apparent good health up to its first convulsion, but had overloaded its stomach—besides the convulsions, the child had a high temperature, and was exceedingly thirsty. The child had been ordered large doses of bromide of potassium and chloral hydrate, and had received mustard foot baths, which did not, however, relieve the condition. Laxatives were given, and also emetics, neither of which had a good result. The temperature of the body at my first visit was 105 in the rectum; pulse, 160; respiration normal. The child was in a stupid and apparently dazed condition, had a very furred tongue, and complained of headache. The face was deeply congested, and the child had had several attacks of epistaxis. My diagnosis was acute gastritis of a severe type, and I attributed the convulsions to an overwhelming of the system with ptomaines, in reality a so-called toxemic condition. My first suggestion was to use lavage, and rid the stomach of all irritant food debris, so I cleansed the stomach with a weak table salt solution, using in all about two quarts of sterile water, to which a half-teaspoon of table salt had been added. In addition to this, I gave a very high enema, and flushed the colon until the water came away clear, using in all about six pints of plain sterile water of a temperature of 100°. The convulsions, which were both clonic and tonic spasms, recurred after each cleansing about once every half-hour. The duration of each attack being about two minutes, after which the child sank into an

apparently deep sleep. Ordered hot mustard foot baths, and an ice bag to the spine, and also to the head. Large doses of chloral, five and ten grains per dose, giving the former per mouth, the latter dose given with a starch solution per rectum. This treatment was continued for twenty-four hours, and as the convulsions continued, the following day one-tenth of a grain of extract *cannabis indica* was added to the other drugs, one dose ordered every two hours. I did not notice any decided improvement, although the convulsions recurred about once every two hours. Bleeding at the nose, however, ceased entirely. On the evening of the third day, during the height of a convulsion, I sent for six leeches, and applied two behind the ears, over the mastoid process of the temporal bone, and applied four leeches from the nape of the neck, about three inches apart, along the spine. There was considerable bleeding, which was easily checked by applying a drop of collodion, and there was such a marked improvement that on the following day there were no convulsions for eight hours. Twenty-four hours after applying the leeches I reapplied them in about the same locality. The child remained brighter, and the convulsions ceased. A careful dieting and cleansing of the gastrointestinal tract with small doses of calomel completed the treatment.

What impressed me in this case was the great value of local depletion, and I am confident that most of the success attributed to therapeutic measures in this case was certainly due to the relief afforded by the leeches. One of the most convenient places is certainly behind the ears, and a leech can also be applied with considerable benefit in those cases of marked cerebral congestion at the *alæ nasi*, for we have here direct relief through the frontal sinus.

187 Second Avenue.

EDITORIAL COMMENTS

Ryder Haggard and the Anti-
Vaccinationists of Great
Britain

The feeling with regard to the vaccination question is still raging high in England, and there are no signs of an abatement, and unfortunately the contagion seems to be spreading to this country. Mr. Rider Haggard, who made for himself a distinguished name wherever the English language is spoken, by his works of imaginative fiction, has lately struck out in a new line, and in a novel called "Dr. Therne" has endeavored to place the case for vaccination in its true light before the general public. The book, besides being extremely interesting as a tale, is in addition an able exposition of the whole subject of vaccination, and points out in the clearest possible manner the probable dangers to which the English people have exposed themselves, by their ill-judged action in allowing a virtual repeal of the compulsory vaccination laws. The author also traces, to a certain extent, the hidden influences that brought about the passing of the Act. The *Medico-Surgical Bulletin*, in reviewing Mr. Haggard's book, makes the suggestion that every doctor wherever the anti-vaccinationist appear, should possess himself of a copy of the story, and should hand it about among his patients. On the other hand, the *London Spectator*, in a decidedly hyper-critical spirit, deplores Mr. Haggard's departure from the stereotyped path of fiction, in that he makes a novel the medium for airing his views on such a question as vaccination. Mr. Haggard, however, in a long letter, gives an excellent answer to this contention, ending with these words: "Shall the gates of fiction be open, as they are, to anyone who wishes to preach a particular form of spiritual faith, or unfaith, and shut to the man who desires, to the best of his poor ability to protest against the handing over the bodies of children

to the risk of disease and death." This strikes us as unanswerable reasoning, and if, by means of this book, Mr. Haggard is able to so educate the people of Great Britain that they will see the errors of their ways, and turn once more to vaccination, he will have performed a great public service, and will be entitled to all the fame and money that may accrue to him from its publication.

In Appleton's Popular Science Monthly for December is a well written article on school children's playgrounds. The argument advanced is that, although in

The Playgrounds of School Children in Country Districts

the large cities every effort is being put forth to provide spacious open air playgrounds for the pupils, in the smaller towns and villages they are quickly dying out, and that unless steps are taken to arrest this backward movement, these playgrounds will soon be things of the past. Miss Oakley, the writer of the contribution referred to, lays the blame for this condition of affairs on the craze for centralization. It appears to be the ambition of those in power to cause to be erected a magnificent building ornate, decorated sometimes Gothic, sometimes Grecian or renaissance, but more often, perhaps, of mixed architecture, but in every instance altogether out of keeping with its surroundings. An ordinary gravel or asphalted playground, in which children could romp and frolic to their hearts' content, would mar the "tout ensemble" of this palatial erection, and therefore it is circumvented by a smooth, well-kept lawn, dotted at intervals with shrubs and flower beds. It goes without saying that the laws against running or jumping by the children on the immaculate grass are as rigidly observed as those of the Medes and Persians which altereth not. There would seem to be no good reason, even in the country, why open air playgrounds should be wholly abolished. True, they are not a matter of necessity as in the cities, but nevertheless it is just as true that the games in which children love to indulge together are in a high degree healthy, and should be encouraged, as we have

more than once remarked in PEDIATRICS. Calisthenics, gymnastics, and all other set exercises, though excellent in their way, will never take the place from a health point of view of the free uncontrolled romping that children delight in. We regard the matter merely from the health point of view, and are strongly of the opinion that, in doing away or curtailing open air play-grounds, those responsible for the care of the young are making a grave mistake.

The diseases of children are now beginning to receive the attention which is surely their due, and that which in most countries has been so long denied them. Everywhere special hospitals are springing up. and recently in Great Britain a great impetus has been given to the movement. Of the European countries, France has ever been distinguished for her care of the young, and she is still in the lead so far as children's institutions are concerned. A healthy sign of the trend of public opinion in England in this respect was afforded a short time ago, when it was resolved to take steps to establish at Liverpool a sanatorium for the open air treatment of the chronic diseases of children. According to the *British Medical Journal*, a meeting of the medical men and others interested in the treatment of the sick poor was lately held for the purpose of promoting a hospital for the open air treatment of the chronic diseases of children. It was pointed out by the speakers that the hospitals at present in existence made practically no provision for the treatment of children suffering from caries and other chronic tuberculous diseases. They could not be efficiently treated as in patients on account of the prolonged period during which they would require to be in the wards if they were to receive any permanent benefit, and it was hopeless to treat them as out-patients on account of the poverty and unsanitary condition of their homes. It was further pointed out that the chief remedial agents in the treatment of such cases were fresh air and sunlight, and that what

Sanatorium for the Open Air
Treatment of the Chronic
Diseases of Children

was required was a large hospital, situated in the country, where the patients could remain long enough to have a chance of being completely restored to health. Mr. Robert Jones, surgeon to the Royal Southern Hospital, who was one of the speakers, pointed out that England was far behind Continental Nations in matters of this kind, and instanced the splendid provisions which he had seen in a small village near Boulogne, where there were three large hospitals built for children, one with 1,000 beds, another with 300 and a third with 30. The meeting closed with several promises of substantial support. 'The action of Liverpool is to be highly commended, and if the committee are in need of a model for a country hospital for children, its members cannot do better than send a deputation over here, to view the summer hospital for children and infants, at Staten Island. We say this presuming that it is the intention of the people of Liverpool to erect one large building. Of course if the necessary funds are forthcoming, the separate block system is strongly indicated.

Cholera Infantum

It may be thought that the winter is hardly the season in which to discourse upon an infantile malady, which is more or less peculiar to the summer months, but the "raison d'être" of these unseasonable remarks is an article in the *Buffalo Medical Journal*. Dr. Grosvenor R. Trowbridge, the author of the article, writes an excellent dissertation on the subject, and as he has had, among the numerous Polish population of Buffalo, somewhat exceptional opportunities of witnessing the disease under most favorable circumstances, his opinions are of more than ordinary interest. He notices that cholera infantum is very similar to cholera nostras in the adult, and finds that it is especially rampant among the children of the poorer classes, and is due, in the majority of cases, to the following causes: (1) Insufficient and improper food; (2) overcrowding and filthiness; (3) bad or insufficient drainage; (4) long-tubed nursing bottles; (5) eething; (6) excessive heat. On the whole these are the

causes to which the complaint is attributed by most observers. No one will at least dispute as to insufficient and improper food being the chief cause, nor that over-crowding and filthiness is a weighty reason in its causation. Dr. Trowbridge gives as an example of the results following this condition of things, the Polish district of Buffalo, where "the houses are closely built together, are erected on filled land, which fifteen years ago was, for the most part, swamp, and even now is improperly drained; are, in the majority of cases, built without cellars, and families are crowded into them, without regard to air space or other sanitary conditions, it frequently being the case that a family of eight or ten occupies two or three small rooms, which serve as sleeping, eating and living apartments." As to long-tubed nursing bottles being a constant menace to the life of an infant, it depends altogether on the state of cleanliness in which the tube and bottle is kept, and as it is much more easy to keep a short tube clean than a long one, it follows that a short tube is preferable. We believe that Buffalo was the first town in the United States to pass a regulation insisting on the use of short-tubed bottles. The last opinion advanced in the article: that excessive heat is not always the cause of cholera infantum, will not meet with universal agreement. Many, if not the majority of authorities on the diarrheas of children, say with Dr. Vaughan, that "cholera infantum never occurs, save in the hot months of summer, at a time when poison-producing germs are most abundantly distributed." However, as the specific micro-organism of cholera infantum has yet to be discovered, this judgment can hardly be said to be final.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, December 8, 1898.

J. HENRY FRUITNIGHT, M.D., Chairman.

Phocomelus of the Humerus in Epilepsy as a Stigma of Degeneration, with a Report of Two Cases.—Dr. L. PIERCE CLARK, of Craig Colony, Sonyea, N.Y., read a paper with this title. He said that it was remarkable what a large number of stigmata affecting the hard and soft parts were observed among the epileptics at the Craig Colony. As it had been stated that the right humerus was usually a very little longer than the left, such a variation, within reasonable limits, should not be looked upon as a stigma. Phocomelus, or the shortening of extremities, had not received much attention in the study of monstrosities, but it was evident from a search through the literature that the humerus was less frequently the seat of abnormalities than the other long bones.

Ferrer had only recently recognized shortening of the extremities as a stigma of epilepsy. The only recorded case of shortening of the humerus in which this was claimed to be a stigma of epilepsy had been reported by two French observers. It occurred in a girl, and the shortening was very slight. Examination of several thousand soldiers had shown that the left humerus was usually the longer one in left-handed persons. Dr. Clark then reported the two following cases:

The first patient was a girl of 19 years, of Irish parentage, who had had epilepsy since she was 3 or 4 years old. The father was intemperate, and died of phthisis at the age of 41; the mother died of some unknown disease when 53 years of age. The child was injured on the left side—she probably had birth palsy. She began to walk at 15 months of age. When 3 or 4 years old she had several severe convulsions, which left a left-sided and complete hemiplegia for three or four months. The second attack occurred about two months after the first

one. Four attacks occurred at the Craig Colony on April 6th, and were of the same general character. The convulsive movement was confined to the left side of the face, and the subsequent unconsciousness lasted but a few seconds. Her seizures were usually of the *petit mal* type. These attacks were preceded by an epigastric aura. She had had as many as fifteen seizures in the twenty-four hours. On examination, the right humerus was found shorter than the left, in spite of the defective development of the left upper extremity. Athetoid movements were observed most typically in the thumb and great toe on the left side. The suggestion was made that the phocomelus was due to a pre-natal palsy. She was 5 feet 3 inches in height, and weighed 101 pounds. The grasp of the dynamometer was 42 with the right and 38 with the left hand. The right humerus was 9 inches and the left $12\frac{1}{2}$ inches long. The ulna measured 9 inches on both sides; the right radius was $8\frac{1}{4}$ and the left 8 inches long. The length of the right lower extremity, measured from the anterior superior spinous process of the ilium to the internal malleolus, was 31 inches, and that of the left limb $30\frac{1}{4}$ inches.

The second patient was also a girl, 20 years old, a native of the United States, and single. On October 20, 1896, she was admitted with epilepsy of over eighteen years' duration. She was the sixth child in a family of seven, and was born at full term after a normal labor. She was at first in every respect healthy and normal. When 2 years old, one knee swelled, and after several months contractures developed, necessitating tenotomy. One year later an amputation was performed above the knee. Apparently the disease was tuberculosis. The right arm then attracted attention, and was thought to have been paralyzed at one time. The epileptic seizures were at first of the *grand mal* type, but now are those of *petit mal*, and occur at intervals of about six days. She was of good physique. The condyle of the shortened humerus was found to be unduly prominent. She weighed $95\frac{1}{4}$ pounds, and was 5 feet $4\frac{1}{2}$ inches in height. The grasp of the dynamometer was 45 with the right, and 43 with the left hand. The length of the right humerus was $7\frac{1}{2}$, and that of the left 12 inches. The length of the hand was the same on both sides.

Dr. FRANCIS VALK said that he was impressed with the fact that in the first case reported there had been a decided squint on the left side. This had suggested to him the inquiry as to whether systematic examinations had been made at the Craig Colony regarding the ocular conditions presented by the epileptics. At one time he had himself observed several children while the eyes were kept under the influence of atropin. During this period the epileptic seizures had seemed to be milder, but they had returned with their former severity after stopping the atropin. The case just reported had also suggested the query as to whether the weakness of the muscles on the left side had anything to do with the turning in of the eye, for he was inclined to believe that the majority of squint cases were the result of muscular weakness.

Dr. CLARK replied that one of the physicians of the Colony was making a series of careful tests of the eyes of the epileptics. He had heard this gentleman make the statement that the use of atropin in the eyes seemed to diminish temporarily the severity of the epileptic seizures. A defect in the eye often gave the first hint as to the diagnosis of epilepsy.

The Advantages of Protargol and Argonin in the Treatment of Purulent Ophthalmia in Infants.—Dr. EDWARD S. PECK read this paper. He said that since the first introduction of silver nitrate into the treatment of gonorrhea, many attempts had been made to destroy the gonococcus. The tendency of recent times had been to look for remedies of this class which, while capable of destroying the gonococcus, would be milder in their action. The advantages claimed for the newer silver salts, forming the special theme for present consideration, when used in the treatment of purulent ophthalmia were: (1) Quick destruction of the gonococcus; (2) the earlier disappearance of the secretion and of the inflammatory process; and (3) the more prompt restoration of the injured cornea and other tissues to the normal. Both argonin and protargol are silver proteid compounds, the solutions of which cannot be precipitated by albuminous fluids. Protargol is a yellowish powder, readily soluble in cold or hot water, and both the powder and the solution keep well. Argonin contains 4.2 per cent. of silver. It is a white powder, readily soluble in slightly

warm water, but the solution is turbid, and decomposes if exposed to too much heat. When so decomposed, it is very irritating. Silver nitrate contains 6.35 per cent of silver, and hence occupies a middle position in this respect between protargol and argonin. A clinician who had used 2 per cent. solutions of argonin claimed: (1) That it killed the gonococci in a short while; (2) that even in solutions stronger than 2 per cent. it had but little tendency to set up inflammations; and (3) that it had no caustic properties. Protargol is more powerful, and should not be used in greater strength than $\frac{1}{2}$ to 2 per cent.

In some of the cases observed by Dr. Peck the gonococcus disappeared in two weeks, and in none was it present longer than four weeks. The average time was about five weeks in both adults and infants. In the cases so treated there has been less ulceration of the cornea, with iris protrusion and imprisonment of the iris; the gonococcus had been more quickly eradicated; there had been an earlier disappearance of the secretion and of the inflammatory process; more prompt restoration of the injured cornea and conjunctiva, and the patient had experienced much less pain with protargol than with the silver nitrate. In these cases the bacterium usually present is the diplococcus, contained within a round cell formation—usually fifteen or twenty cells on one slide when the specimen is examined under a power of 750 diameters. Sometimes there will be only one or two of the cells, with ten or twenty diplococci contained in each, in which case the specimen may be said to be poor in germs. A loop of platinum wire, made fast to a wood handle, gathers up some of the secretion from the lower eyelid, and transfers it to a glass slide. A second slide is then smeared upon the first, thus giving two slides for examination. They are next separated, and placed in methylin blue for one or two minutes; washed under a stream of water, and dried with white blotting-paper. The two specimens so prepared are best examined under an immersion lens of the power mentioned. Repeated examination was often necessary to verify a suspicion of their presence.

In preparing a solution of argonin, ten parts of cold water are first introduced into a flask, and then one part of argonin. The whole is vigorously shaken until a uniform mixture is obtained, when sufficient boiling water is added to make up

the desired amount of solution. The whole is frequently shaken until complete solution is effected. It is then strained through a piece of gauze. The most effective strength is a 3 per cent. solution. In preparing a solution of protargol, the powder is stirred with water, with or without the addition of a little glycerine, until it forms a paste. The requisite quantity of cold or lukewarm water is then added. A strength of .25 per cent. to 2 per cent. is generally employed; a saturated solution of protargol has a strength of 50 per cent.

In the treatment of these cases of purulent ophthalmia, the speaker said that it was most essential to have skilled nursing, and this was best obtained in a well-regulated hospital. If one eye only were effected, the other eye should be securely covered, except in the lower and outer region, which is left open for ventilation. The least harsh covering for the newly-born is a circular piece of lintine covered with sterilized cotton and gauze. It is smeared with collodion, and applied over the unaffected eye. The eye so protected must be inspected every second day. The affected eye must be handled from behind the patient's head. Pieces of lintine taken from a block of ice are applied to the eye, and changed every one or two minutes for one hour without intermission, after which the interval may be lengthened to one, two, or three hours, according to the character of the affection. At first, the continuous application of ice-pledgets should be made, night and day, and no interval allowed until there is positive evidence of abatement of the secretion. This might not occur for two or three weeks, or it might take place in a few days. The eyeball and conjunctival sac should be irrigated with a warm saturated (4 per cent.) solution of boric acid. The parts should be kept clean and as free as possible from secretion. A .5 per cent. or 1 per cent. solution of protargol should be carried rather forcibly over the whole eyeball and into the conjunctival sacs from four to six times a day by means of a large pipette. As soon as the secretion lessens in amount and becomes shreddy, a 2 per cent. solution of protargol may be substituted, and used less frequently. This treatment should limit the disease to three, or possibly two weeks. Examinations for the gonococci should be made every second day, and the eye must not be regarded as safe until a full week has elapsed in which no gonococci

have been found under the microscope. The gonococci may be present even in an apparently uninflamed eye. It was worthy of your note that protargol could be combined with many other salts, such as sodium chloride, and that it was unaffected by cocain, atropin, eserine and other allied substances used as anodynes in the eye. It is not decomposed by the albuminous substances present in the secretions from the mucous membranes, and it is the only silver compound at present known which is not precipitated by dilute hydrochloric acid. In his hands, in cases of suppuration of the lachrymal sac, stytes, etc., the pus formations had been more quickly checked by protargol than by any other agent.

The following cases were cited as illustrative of the treatment:

Case I.—A baby, 5 days old, with numerous gonococci in the eye, and great chemosis. At the time the case was seen the rather harsh method was in vogue of applying the pure protargol powder twice each day, and allowing it to remain in the eye for three minutes. On the fourteenth day the gonococci had disappeared, and on the seventeenth day the secretion was so slight that the night treatment was discontinued. At this time the case passed from observation, but recovery was assured.

Case II.—A baby, 2 weeks old, in whom both eyes were affected. The pus was abundant and the swelling great. There was no involvement of the cornea of either eye. The mother had previously had a vaginal discharge, and the ophthalmia had developed on the seventh day of the life of the child. Examination showed the presence of the gonococcus of Neisser in the discharge from the mother, while the secretion from the infant's eye was rich in bacteria. A 5 per cent. solution of protargol was used on the eyes. The child was discharged from treatment in two weeks and a half. In this case the protargol acted like a specific.

Case III.—A baby, born on November 1, 1898. For several weeks previously the mother had been in the venereal ward of the City Hospital under treatment for an obstinate gonorrhea. The child's eyes were carefully irrigated just after

birth, and a 2 per cent. solution of silver nitrate instilled into the eyes, and this was repeated on the following day. Nothing unusual was noted until November 10, when the left eye became inflamed. The pus was scanty and yellow, and gonococci were found in it. The conjunctival membrane was red, but the inflammation was slight. Ice-pads were applied for three hours. On the following day the secretion had increased, and the ice-pads were applied constantly, and the eye irrigated every ten minutes with boric acid solution. A 5 per cent. solution of protargol was applied to the eye at one and nine in the morning, and at five in the afternoon, and allowed to remain each time for ten minutes. The interval between the irrigations was gradually lengthened. The cornea remained bright and clear. On November 21, or eleven days after admission to the eye ward, the discharge was almost gone, and it had been free from gonococci since November 11th. Accordingly, the protargol was discontinued. On the following day the discharge reappeared, and increased rapidly. It was of a dirty yellow, and contained numerous gonococci. On the second day the protargol solution was again used every fifteen minutes, and the ice-pads applied every four hours. On November 25 only one cell was found after a prolonged examination with the microscope, and the secretion was extremely scanty. On November 30 a few gonococci were found. The protargol was then ordered to be used every four hours. On December 7 only one gonococcus was found.

Dr. FRANCIS VALK said that he had not yet heard any testimony which seemed to indicate that these newer silver preparations were more valuable than the old silver nitrate. At his clinic, at the New York Dispensary, he had adhered to one line of treatment, and had observed his cases every day. He used a solution of nitrate of silver known as Higginbotham's solution. He believed that he was the only one who had ever used it in the eye. It is a 1 per cent. solution of silver nitrate containing one-fourth part of sweet spirits of nitre. This supplies sufficient free nitrous acid to keep the silver in perfect solution and prevent decomposition. After cleansing the eye, this solution is applied freely to the eye daily. Since he had adopted this treatment he had not observed perforation of the

cornea and loss of the eye in a single case, although some cases had presented ulcerations.

Dr. F. N. LEWIS said that the paper just presented encouraged him to give these preparations a more extended trial. Hitherto he had felt disposed to continue the use of that old and tried friend—nitrate of silver. Most of the new preparations recommended for the treatment of gonorrheal ophthalmia had been tried at the Manhattan Eye and Ear Hospital. A few years ago solutions of bichloride of mercury were much in vogue, but they had proved disappointing, and the surgeons there had finally gone back to the nitrate of silver. His experience with protargol had not been very extensive. A case was cited in which the patient had come to the hospital with a well-marked gonorrheal ophthalmia of one eye. The disease was already so far advanced that the cornea was nearly on the point of perforation, and the whole cornea was in a sloughy condition. The extract of suprarenal capsule was tried upon this desperate case, and with very bad results. This preparation not only did no good, but it did much harm, as it increased the quantity of secretion and the redness and the swelling of the lids. After three or four days this extract was discontinued and protargol substituted. It certainly acted very well in checking the discharge, but he did not feel disposed to recommend the protargol very highly on this account, because where the cornea sloughs one naturally expects a diminution of the inflammatory process under simple cleansing. Dr. Lewis said that he had been authorized by Dr. David Webster to say that he had used the suprarenal extract in a case of ophthalmia neonatorum with a similar result to that just described. Only one eye was affected, and the cornea had already perforated. The use of the suprarenal extract was followed by increased swelling and redness, so that the case resembled a marked example of gonorrheal ophthalmia. The speaker said that, in general, he had been pleased with the cases in which he had seen protargol used. It was quite possible that much better results would be secured from the use of protargol and argonin, and certainly these remedies were worthy of a more extended trial. In gonorrheal ophthalmia and ophthalmia neonatorum it was his custom to rely upon thorough

cleansing and skilled nursing as the chief factors in the treatment.

Dr. E. S. THOMSON said that he had not personally used protargol, but had followed the cases in which this salt and argonin had been tried by Dr. Webster, and had tested the secretions frequently. In nearly every case in which argonin had been used there had been an increase in the quantity of the secretion, or else it had remained the same, so that after four days it had seemed wise to return to the silver nitrate. The microscopical examinations also did not seem to show any remarkable diminution in the number of the gonococci. A smaller number of cases had been treated with protargol. It was true that in some of these the discharge had disappeared in two or three weeks, where the disease under treatment had been an ophthalmia neonatorum, but the same had occurred with the old silver nitrate treatment. These cases had been of moderate severity, as indicated by the microscopical examinations. While, therefore, he had but little faith in argonin, he believed protargol was about as good a germicide as silver nitrate, and it was certainly less irritating. In seventy or eighty cases of ophthalmia neonatorum there had been only two or three in which the irritation from the use of nitrate of silver had been so severe or so lasting that it had seemed injudicious to continue its use. In the few cases, therefore, in which it was desirable to avoid irritation, protargol might be tried with profit, but in other cases he was still disposed to use nitrate of silver.

Dr. M. E. TULLY said that his experience with these silver salts had been limited to a few cases of muco-purulent and catarrhal conjunctivitis. He did not find that argonin was any better than alum, but protargol acted very much better. In some of the published cases it had been advised to retain the solution in contact with the parts as long as twenty or thirty minutes, and it was possible, if such a method were practicable in ophthalmia, that the results might be better. It was not improbable that we did not yet know the proper method of using these new preparations.

Dr. J. H. FRUITNIGHT said that he had been at first prejudiced against the use of these new silver salts because the

genito-urinary surgeons seemed to be almost unanimously of the opinion that they were inefficacious in the treatment of gonorrheal urethritis. He was disposed, however, after hearing this paper, to give them a fair trial in gonorrheal ophthalmia, but no matter what the remedy, the nursing must still be considered of the greatest importance. He would like to know whether Dr. Peck would favor the use of argonin or protargol as a substitute for the silver nitrate in the Credé prophylactic method of treatment.

Dr. PECK, in closing the discussion, said that there was already an extensive literature on the subject of argonin and protargol, although these remedies had been before the profession a comparatively short time. Probably the best work in this country had been done at the Massachusetts General Hospital). Regarding the inquiry just made by Dr. Fruit-night, he would say that he was about to advise his colleagues in the Maternity Hospital to make use of protargol instead of silver nitrate as recommended by Credé. He did not himself believe that protargol was any better than nitrate of silver as a germicide, but it was certainly very much less irritating. He had put a 10 per cent. solution of protargol into his own eye, and had found it decidedly less irritating than a .5 per cent. solution of cocain, or a drop of cold water.



ABSTRACTS

FAVUS, A CLINICAL STUDY, WITH SPECIAL REFERENCE TO TREATMENT.

A. D. MAYER (*Med. News*, 1898, lxxxiii., 755) says that favus, until of recent years considered as comparatively rare in this country, has within the last decade showed such a marked increase that at the present time it may be regarded as a rather common affliction—one which should prove a source of anxiety to the profession as well as to the public at large. This rapid multiplication cannot be ascribed, however, to the infectious nature of the disease; it is a result rather of the migration to this country of a class of immigrants among whom the affection is very prevalent, namely, the Austrian, Hungarian, and Russian element. Favus continues to be a rare dermatosis among the strictly American population, although occasional cases present themselves.

In the skin service of Dr. C. W. Allen, at the Good Samaritan Dispensary, there were 100 instances of favus, 85 males and 15 females, among 3,350 dermatological cases treated from April 1 to December 31, 1897. It should, perhaps, be stated that this ratio is much larger than would be found in other city dispensaries, and is undoubtedly a result of the location in a district and among a people in whom favus is prevalent.

The disease usually begins in childhood, and is most common between the ages of 8 and 14 years. Our youngest patient was but 1½ years of age, the oldest a woman of 50. But few of the cases seen developed in this country and most of them were of several years' standing. Filth and overcrowding are the *achorion's* strongest allies, hygiene and cleanliness its most deadly foes.

The diagnosis is not difficult in a typical case or in one that has not recently been treated. One would instantly make a correct diagnosis if the scalp were honeycombed with sulphur-yellow, cup-shaped crusts pierced by one or more hairs, the hairs themselves dry, friable, ash-gray, and lusterless, and if patches of alopecia, with their shiny, parchment-like skin were present.

For comparison let us take another case such as is more frequently presented. The mother, probably with a view to testing our diagnostic ability, kindly oils and scrubs the head of her child before bringing it to us; in consequence we see only a few small areas of baldness and a diseased scalp which might be readily taken for impetigo, pediculous dermatitis, trychophytosis, or favus. Here, in order to obtain a better view of the head, it is important that the hair be clipped; in fact it is frequently necessary to expose the entire scalp in order to arrive at a diagnosis from the clinical picture alone. If, then, we see a dry scalp studded with small, red, circumscribed, and irritated, circular depressions, covered by a deli-

cate shining epidermis, patches of cicatrization and alopecia, and perhaps a few cup-shaped crusts, we will not be at a loss for a diagnosis. If one of these crusts be removed with care, we find beneath it a delicate shining epidermal film covering the depression, or if this has been destroyed, we see a glazed, oozing, slightly depressed surface. The yellow crusts are said to have a peculiar mouse-like odor, but I have been unable to verify this in the cases I have seen.

Favus is an exceedingly obstinate disease to cure. Before beginning treatment, the patient or his parent should be informed that several months, perhaps a year or more, of constant medication is required for the complete eradication of the disease; and he should be impressed with the necessity of regular attendance.

A child with favus should be isolated, so far as possible; it should sleep alone, and have a separate wash basin, towels, brush, comb, etc. School attendance is, of course, absolutely forbidden. A hair-clipping initiates our treatment. In former years Dr. Allen strenuously opposed the use of clippers for cutting the hair of favus and ringworm subjects, especially in institutions, claiming that the machine could not be properly disinfected, and afforded a nidus for the achorion, and thus became a source of reinfection and a means of propagation of the disease. Recently, however, he has introduced a system of dispensary hair-cutting, and it is now our practice to clip the hair of all favus subjects with a pair of clippers used exclusively in these cases. Lysol in its pure state is employed as a means for rendering the machine aseptic, and also acts as a good lubricant; by constant immersion in this fluid the instrument remains bright and free from rust, and is always ready for use. After cutting the hair, the clipper is thoroughly sterilized in boiling water, and when dry is replaced in the lysol. Before using, the lysol is washed off in hot running water.

One chief object in cutting the hair is to keep these infectious individuals out of the barber-shop, where they habitually resort without apparent objection on the part of the barber. Legislation has been enacted, at least in this city, to keep these children out of school, but the restriction of hair-cutting in barber-shops, which is just as important, has been ignored. It seems a pity that these children, of whom there is a large number in this city, should be denied the privilege of a public-school education during the necessarily prolonged period of treatment. The establishment of a public school on the lower East Side, to be attended only by children suffering with favus and ringworm, as advocated by Dr. Allen, deserves further consideration.

After clipping the hair, if the scalp is crusted and dirty, an oil or ointment is prescribed with which to soften the crusts, which are then removed with tincture of green soap. When the patient returns after a few days with a clean head, a 5 per cent. chrysarobin ointment is ordered, and epilation begun. Patients are furnished with epilation forceps by the dispensary at cost price, and some member of the family is instructed how to properly epilate. We insist that the patient come to the dispensary three times a week under penalty of subsequent treatment being refused. When the reddened patches have been well epilated and the scalp looks

fairly clean, what we term "chrysarobin paint" is applied. This is a 10 per cent. solution in collodion, and is applied to the closely clipped scalp with a stiff-haired varnish brush two or three times a week. The paint adheres firmly to the short hair and to the scalp, and thus insures continuous medication, while the use of an ointment is frequently neglected or occasionally totally disregarded by the patient. Another advantage lies in the fact that the chrysarobin cannot be disseminated, and hence does not produce a dermatitis of the neighboring parts or cause eye involvement. Not only do we obtain the beneficent action of the chrysarobin, but the dry collodion, by excluding the air from the underlying structures, in itself probably acts as a germicide, or at least tends to prevent the growth and proliferation of the mycelia and spores, since the favus fungus is aerobic and cannot flourish in the absence of oxygen.

When the diseased area is large or the patches scattered over the entire scalp the "yellow-kid" appearance of the head is an objection, and in private practice might prove an obstacle to the employment of the paint. But in private and among the educated and more cleanly population, treatment, as a rule, will be resorted to before the disease has made much progress, so that the patches under treatment can be hidden by healthy hair, and at the same time the diseased hair be kept closely cropped. This is especially true in female subjects.

If we desire to inspect the head at any time before the paint has worn off, the collodion crusts may be removed by oil or ether. The underlying scalp always looks smooth, is free from dirt, and the diseased patches are readily recognized. If fresh areas of disease have cropped out, the ointment may again be used and epilation practiced, to be followed after a week or two by chrysarobin-collodion. When too much inflammatory reaction follows the employment of chrysarobin, it should be discontinued for a few days, and a 10 per cent. ammoniate of mercury ointment substituted.

The duration of treatment depends upon the duration and extent of the disease. Small areas may be cured in a short time, but usually a year or more of persistent treatment is required for the complete eradication of instances that are at all extensive. The conscientious use of the epilation forceps by the patient at home shortens the treatment and is a great aid to the physician.

THE TREATMENT FOR INTESTINAL WORMS.

In the *Revue de Therapeutique Medico-Chirurgicale* of June 1, 1898, LYON tells us that the patient should have nothing for his dinner or supper save a bowl of milk or soup. The bowels should also be carefully washed out in the evening by an injection and the vermifuge taken, a purgative and rectal injection being used the next morning. He believes that the

sulphate of pelletierine in the dose of 2 to 4 grains is best given in a mixture containing tannin; thus he prescribes:

- ℞ Sulphate of pelletierine, 3 grains.
 Tannin, 15 grains.
 Distilled water and simple syrup, 2 ounces.
 Essence of orange, 10 drops.

This is to be taken in two doses at half-hour intervals. Ten minutes after the ingestion of the second dose a large draught of Hunyadi water should be taken. Such a prescription should not be given to a pregnant female, nor to very old persons. In other instances the following prescription may be used:

- ℞ Oleoresin of male-fern, 1 to 2 drachms.
 Syrup of ether, 1 ounce.
 Mint water, 1 ounce.
 Syrup of acacia, 3 ounces.

To be taken in two doses two hours apart. Or the oleoresin of male-fern may be given in capsule with calomel, 7 grains of the oleoresin and 1 grain of calomel to be put in one capsule; twelve to sixteen of these capsules are to be prepared, and two should be taken every ten minutes. One hour after the last capsule is administered a purgative may be given.

Lyon points out the fact, which is well known to therapeutists, that castor oil should not be given after male-fern, as it favors the intoxication with filicic acid. For the removal of round worms, Lyon advises the use of santonin combined with calomel; two to five grains of santonin may be given with a grain or two of calomel, divided into three cachets. For the removal of seat-worms Lyon suggests injections with salt water, the use of castor oil or of thymol (three grains in two ounces of olive oil). In other instances glycerin suppositories may be used with advantage, or, again, a solution of boric acid may be employed.—*Therapeutic Gazette*.

ENDOCARDITIS ULCEROSA IN A CHILD CAUSED BY THE BACILLUS PSEUDO-DIPHThERITICUS.

H. PREISZ (*Ung. medic. Presse*, 1898, iii., No. 10 and 12). Endocarditis ulcerosa may be caused by the most various microbes. Besides the streptococcus pyogenes, the staphylococcus aureus and albus, the diplococcus lanceolatus, especially play an important rôle in its etiology, according to later researches, also, the gonococcus.

In 1895 Howard described a case where the endocarditic vegetations contained a bacillus which was similar to the diphtheria bacillus, but which was virulent. A case resembling this one has now also been observed by Preisz, who found at the autopsy of a 5-year-old child, after it had been treated for a short time only at the hospital, the following conditions: Slight icteric hue of the skin. The skin contains bluish, trans-

parent hemorrhagic effusions of the size of lentils. The dura mater has a yellowish tinge; the meninges contain bloody infiltrations; a section of the brain presents a few bloody points, of the size of poppy seeds, which cannot be wiped off (ecchymoses). The upper portion of the right tonsil contains a pea-sized cavity, whose walls are covered by a slate colored detritus; the posterior and lateral wall of the pharynx is covered by a deposit the thinness of paper, the mucous membrane is strongly injected. The larynx and trachea present numerous ecchymoses, some as large as hempseed, which always show a pale spot in their centre. The lungs are devoid of blood, compact, of a rusty brown color, posteriorly nearly empty of air, presenting on the cut surface a design resembling the skin of a tiger (ecchymoses). Both the right and left ventricle of the heart are enlarged; through the epicardium are visible numerous dark red or pale yellowish punctate and stripe-like spots, some of which are the size of half a lentil; the centre of these spots only present a pale point. The cavity of the left heart is markedly enlarged, its wall is not thinned. The bicuspid valve in its whole circumference is changed into a karfiol like, irregular formation, its opening being thus greatly contracted; the new growths extend upwards into the left portion of the auricle, and there form a raised plaque of the size of a kreutzer; in the direction downward, however, these growths also extend to a papillary muscle, and the left surface of the septum between the ventricles is also covered with vegetations. Besides this, there are present at points, small, granular deposits, in the left ventricle; in the right auricle, around the orifice of the sinus coronarius, in the right ventricle, at the anterior portion of the membran-septum, below and around which the endocardium is infiltrated with hemorrhages. The semi-lunar valves of the aorta are covered with irregular vegetations of the size of a bean, greatly narrowing its orifice. The liver is pale, of a yellowish brown color. The spleen is enlarged to twice its volume, containing numerous infarcts reaching the size of a nut. The mucous membrane of the intestine shows cloudy infiltrations, reaching the size of lentils. The kidneys are puffed, pale, containing numerous punctiform ecchymoses, the right one presents an infarct the size of a bean.

This post-mortem finding, therefore, pointed to a grave septicemic infection, whose sequel were found in the numerous hemorrhages in various organs, as well as in the occurrence of icterus. The infarcts discovered in the spleen and kidneys were the result of the endocardial changes, and the hemorrhagic macula of the mucous membrane of the larynx and the trachea, and also those below the visceral lamina of the pericardium were only of an embolic, metastatic nature, the central pale spot making the embolism and its dark red surrounding answering to the zone of inflammation.

After triturating small portions of the vegetations and staining them with fuchsin, the microscope revealed the presence of innumerable bacilli, so plentiful, and so dense that the specimens consisted of pure cultures. These bacilli, on first view, were found to be very similar to the diphtheria bacilli, possessing all the characteristic marks of the latter. They consisted in straight, curved, thin, thick, long rods, club-shaped

at both extremities. The blood contained only a few bacilli, and these were partially enmeshed in the white corpuscles. Cultures were now made of agar. The culture-medium, on which was deposited some of the fluid from the walls of the heart, of the bicuspid valves, and of the aortic valves developed numerous white colonies, which, in form, answered perfectly to the colonies of the diphtheria bacillus. Besides this, a few white and orange-colored colonies of cocci (*staphylococcus albus* and *aureus*), made their appearance in all three localities. The culture medium which was inoculated with blood, and particles of vegetations, only developed colonies answering to the diphtheria bacillus in small numbers, while that inoculated with the secretion taken from the pharynx, developed numerous colonies of cocci, none of which resembled the diphtheria bacillus.

We are now confronted by two questions:

- 1.—Was the bacillus found to be the true diphtheria bacillus.
- 2.—Taking into consideration the fact that the cultures developed from the vegetations presented staphylococci, was the endocarditis caused by the latter?

Animal experimentation, in which this bacillus was employed, proved its deficiency as to virulence, and artificial experiments, to render it virulent, miscarried; the bacillus was virulent and remained so. On the other hand, however it corresponds altogether in form, culture, etc., to the diphtheria bacillus. We could only be dealing with the bacillus pseudo-diphtheriticus, and this must have produced the endocarditis. For, leaving aside the fact that a few coccus colonies were developed from the vegetations in the culture medium, besides numerous colonies of bacilli, there were not any cocci at all present in the sections taken from the vegetations on the bicuspid and aortic valves. The whole mass of vegetations consisted almost entirely of bacilli; and although it was not possible to raise these from the deposit found in the pharynx, we are probably justified in assuming that they had escaped from the latter into the circulation perhaps by way of the ulcer, discovered on the right tonsil, especially as the bacillus pseudo-diphtheriticus is frequently present in the mouth, and may find its way to the latter from the conjunctiva (bac, xerosis).

Howard's case, as well as that of Preisz's, go to prove that the diphtheriticus, though being an innocent microbe when inoculated into experimental animals, is not so to the human subject, but is able to cause in the latter a lethal infection.

What is the reason, then, that we do not meet with endocarditis in true diphtheria? Preisz explains this as follows: It is necessary for the excitation of an endocarditis and the presence of bacteria in the blood, that these should also be able to penetrate into the cells of tissue (endothelial white blood cells), respectively, that these numerals (*Zahlen*) should also be able to receive these bacteria, i.e., that there exists a positive chemo-tactile condition between them, for it is only possible in this way that injuries, bacterial vegetations, and ulcerations of the endocardium can be produced.

This assertion is supported by our knowledge that the streptococcus

and staphylococcus, which most frequently causes endocarditis, does, in fact, penetrate the cells.

We are also aware of the fact that a certain inverse ratio exists between the degree of virulence and the chemo-tactile effect of one and the same bacterium, that all bacteria with a full degree of virulence are never met with incorporated in the cells, while they are taken up by these, when they have decreased in virulence. Preisz thus considers it very likely that the bacillus pseudo-diphtheriticus, in spite of its virulent properties, is able to attack the intima of the circulatory apparatus, where the virulent diphtheria bacillus is unable to do so.

CAUSES AND TREATMENT OF THE SEBORRHOIC ECZEMA. OF INFANTS.

MARFAN (*Die Therapie der Gegenwart*, 1898, iv., 395). As a primary cause of this affection, the so-called neuroarthritic diathesis is frequently made responsible. If we understand by this that seborrhoic eczema is more frequent in children born in families where one or more members have been affected with hemicrania, hemorrhoids, obesity, eczema, gout, asthma, or neuropathic disturbances, we may accept this dictum. The arthritic diathesis is, however, only a predisposing cause, and it is not absolutely necessary that it be present.

As regards the influence of teething, Marfan, after an observation extending over several years, has come to the conclusion that this is no predisposing cause. According to him, the main cause should be sought for in over-nutrition of the infant. The patients are either nurslings which are put to the breast day and night at irregular intervals whenever they cry, particularly at night, and who receive from twelve to fifteen meals in twenty-four hours, instead of being nursed at regular intervals of from seven to eight times, or else bottle-fed babies who are too early put on pure cow's milk, or given the latter in too large quantities and too frequently. These children, as a rule, suffer from indigestion, generally in a light form, but occasionally also of a graver nature. As an additional factor in the occurrence of the seborrhoic eczema of infants, the ingestion by the mother of alcohol, coffee, smoked meats, fish, etc., has been mentioned, as also changes in the mother's milk, due to an eczema of the former, and also long-continued nursing, milk which is too rich in fat, etc. It is impossible to state positively in how far this may influence the occurrence of this affection; we know it to be a fact, however, that Marfan was able to demonstrate over-nutrition in all cases of infantile seborrhoic eczema. Hence, regulation of the diet is the first principle of successful treatment. It is also necessary to look into the condition of the intestinal canal. These children should be ordered a diet of boiled water one morning every two weeks, and should receive one dose of the following every half hour:

R̄ Calomel 0.01—0.02 ($\frac{1}{4}$ to $\frac{3}{4}$ grains).
 Sacch. 0.5 (7.7 grains).
 Ft. chart. tales No. iv.

These small doses are very effective, and quite injurious. It should, however, be stated that calomel is not to be ordered before the child is three or four months old. As a local application, Marfan employs a 1 per cent. solution of picric acid. At first cataplasms of amyllum should be applied moistened with a little picric acid. After the crusts have fallen, the diseased parts are painted with the picric acid solution every second day, and then covered with a dry cotton bandage. As soon as the skin becomes more dry and the redness disappears, this lotion is discontinued, and an ointment of oxide zinc substituted for it.

GLYCERIN SYRUPS.

In a paper read before the New York County Medical Association, on May 16th, and published in the *Philadelphia Medical Journal*, of July 30th, entitled "Some New Practical Pharmaceutico-Therapeutic Notes, and Some New Ideas in Surgical Instruments," Dr. Samuel F. Brothers, Professor of Anatomy, at the New York Post-Graduate Midwifery School, makes some remarks of interest to the pediatricist:

He advocates the substitution of the old sugar-syrups by "glycerin-syrups," on the ground that the former are nauseants and gastric irritants, and frequently defeat the very object for which they are administered; besides, he says, it is not very comforting to find a child suffering from broncho-pneumonia, and weak enough as it is, vomiting not phlegm, but food, as a result of some "syrupy" concoction.

The list he gives comprise almond, dill, anise, orange, brandy, caraway, bergamot, calamus, cinnamon, cloves, coriander, whiskey, cardamom, licorice, fennel, wintergreen, juniper, lavender, lemon, peppermint, spearmint, bay, nutmeg, mulberry, musk, wild cherry, allspice, rose, rosemary, blackberry, raspberry, tolu, sassafras, sarsaparilla, vanilla and ginger,

Gin, rum, brandy, whiskey, wines, champagnes and alcohol may be used in making (with glycerin of course) "glycerin-elixirs." Saccharin might also be used as a substitute. *Compound* glycerin-syrups, or glycerin-elixirs might be used in any variety.

As perfumes and cologne are now used in baking and confectionery, glycerin-syrups, etc., of these, might be found useful. Soda-water syrups are very valuable as flavorings. The author frequently orders them in milk, etc., when all fluids have become obnoxious to a patient; they will then take them with avidity and relish.

He next recommends the more general introduction of ready-flavored powders, to correspond with the German oleo-saccharius.

Dr. Brothers also advocates the experimental use of the powdered elements for internal and external therapeutics. Out of some 73 elements, all told, only powdered iron and mercury are at present used.

He also refers to the use of stable solutions of alkaloids, to replace largely, tinctures, etc., on account of their uncertainty and variability. He has used a weak solution of morphine, atropine, etc., in place of paregoric and tincture of belladonna in children, with more favorable results and fewer accidents. He recommends collateral triturations for powders.

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ORIGINAL ARTICLES

INTUBATION OF THE LARYNX.

By FRANK W. WRIGHT, M.D.,
Health Officer, New Haven, Conn.

WITHOUT going into the history of attempts made in years gone by to relieve by a tube dyspnea, due to obstruction of the larynx, it is sufficient to state that intubation of the larynx, as now perfected was evolved from the mind of the late Dr. Joseph O'Dwyer, after years of consideration and experiments, both upon the living and upon the dead. He states, to quote his own words, that "a complete failure with tracheotomy in the New York Foundling Hospital extending over a period of several years, was the real incentive to the work."

His work, as far as he knew at the time, was entirely original, and when he learned that others before him had attempted to relieve obstruction of the larynx by a tube, he refused to look up the literature on the subject for fear he might be discouraged by the failures of his predecessors.

Although intubation was simpler than tracheotomy, the fact that expert intubationists were few and that the results of neither operation were satisfactory, prevented intubation, until the advent of the treatment of diphtheria by antitoxin serum, from being as generally practiced as at the present time. This operation, in conjunction with the diphtheritic antitoxin serum treatment, has so revolutionized the results of the treatment

of diphtheritic laryngitis, that instead of mortality from 90 to 95 per cent., we now expect, under favorable conditions, as high a percentage of recoveries.

This operation is, at the present time, done to the almost entire exclusion of tracheotomy. The latter operation is not performed in any of the public institutions or in private practice except when an intubationist is not at hand or when intubation has failed to give relief on account of the membrane having extended beyond the reach of the tube. Although the great majority of intubations are done to relieve the dyspnea due to diphtheritic laryngitis, the usefulness of the laryngeal tube is by no means confined to this class of cases. It is applicable to all forms of acute stenosis when the trouble is within the larynx, it, of course, being obviously useless, in retro-pharyngeal abscess or edema of the epiglottis and surrounding parts when the tissue involved is so situated as to close over the head of the tube. It is also applicable in chronic laryngeal stenosis, due to stricture of the glottis. O'Dwyer said, as long ago as 1888, that "had intubation of the larynx proved a complete failure in the treatment of croup, I would still feel amply repaid for the time and expense consumed in developing it, for I believe that it offers the most rational and practical method yet devised for the dilatation of chronic stricture of the glottis."

The advantages of intubation over tracheotomy are that the former is more quickly done—there is no cutting—and is consequently more readily consented to; does not require trained assistants or trained nurses; no special preparation is necessary; the tube remains in the larynx but a few days, instead of several weeks, and there is no wound offering a point for fresh infection, which requires careful attention long after the original trouble has disappeared. If it is practicable, a trained nurse is desirable, as in all serious cases, but is not absolutely essential; any intelligent person will do who will obey instructions and can put herself in touch with the patient.

The indications for intubation are dyspnea accompanied by a croupy cough, partial or complete aphonia, a pallid countenance, retraction of the supra-sternal space on inspiration, shortened expiration and prolonged inspiration, with little or no fever, but never for dyspnea due to pulmonary trouble, which

may be known by the high temperature, character of the cough, loss of voice, livid countenance, shortened inspiration and prolonged expiration, and but slight retraction of the supra-sternal space.

While intubation seems simple and has given very gratifying results, the fact that it is a serious surgical operation must not be forgotten, and it should only be practiced when dyspnea is so great as to threaten life. On the other hand, it must be remembered that prolonged dyspnea exhausts the strength and renders the patient susceptible to pulmonary complications. The better the physical condition, the more favorable the prognosis.

The dangers of intubation are traumatism, either from unskilful introduction of the tube, or from the tube imperfectly fitting the larynx or from being improperly constructed and from the occlusion of the lumen of the tube by the exfoliating membrane.

THE TECHNIQUE of the operation is as follows: The tube is selected according to the age and size of the patient. A scale accompanies each set of instruments, which gives approximately the size for different ages; but it must be remembered that a large child requires a larger tube than a small one, and, as a rule, a male a larger one than a female. A piece of braided silk is passed through the eye in the head of the tube and this should be long enough to extend several inches beyond the mouth after the tube is in the larynx. The object of this is to withdraw the tube if it should be necessary, either from its being plugged by a loosened membrane or because of having failed to enter the larynx. Two assistants are necessary, a physician and a nurse, if practicable, yet any intelligent person will do who will follow instructions and not get excited. The patient is then wrapped in a sheet, carefully pinned, so that the arms cannot be raised. If this is neglected the child is almost sure to get the hands free, catch the string and undo the work. The patient is then placed in an upright position on the lap of the nurse, the head resting on her left shoulder, her limbs holding those of the little one between them. She then with her hands holds the arms and body as still as possible. The assistant standing behind and at the left of the nurse places a hand upon each side of the child's head and holds it immovable and in a line with the body. The operator, sitting so as

to face the patient, inserts the mouth gag and gently opens the mouth as wide as possible. As the gag is self-retaining, it is not necessary for the assistant to touch it if carefully adjusted. When the child has no teeth, it is not necessary to use the gag. The left index finger is then passed along the tongue and beyond the epiglottis until the arytenoid cartilages are felt, it not being necessary, and often impossible, if there is much swelling, to give attention to the anatomical relation of the opening of the larynx to the other parts.

Having located the chink of the glottis, raise the finger slightly so as not to obstruct respiration entirely, pass the tube along the inner surface of the finger, and be careful to keep the handle of the introducer in the median line of the body. As the end of the tube approaches the glottis again, place the finger upon the cartilages so as to act as a guide to the tube, which is passed downwards and forward by raising the handle of the introducer. When the tube has entered the larynx for about two-thirds of its length, release it from the obturator, and by placing the finger upon its head, push it down to its proper position, at the same time withdrawing the instrument. Before taking the finger from the mouth, pass it down behind the larynx, if the tube is in place, the posterior wall of the larynx will be felt between the finger and tube, but if it is not in place it will be found in the upper part of the esophagus, and can be removed by the string, and the operation repeated. It is seldom necessary for a person of experience to make more than one trial if the patient has remained in the correct position and the handle of the introducer kept in the median line. As soon as the instruments and finger are removed, the patient will give an expulsive cough, the more violent the better, as it more quickly and more completely removes from the larynx any membrane or mucus that may be there. If the cough is not forcible enough to clear the tube, a little whiskey and water given to the child will excite a spasm of coughing, and that will expel any membrane that will be likely to interfere with respiration. After a wait of sufficient duration, to satisfy one's self that there is no obstruction to respiration, the string may be removed by again using the gag and placing the left index finger upon the head of the tube, and with the other hand draw upon one end of the string. One must be careful

to press firmly upon the tube while pulling upon the string, lest the tube be drawn from the larynx.

THE PROGNOSIS depends upon the amount of septic infection, the possibilities of such complications as broncho-pneumonia, occlusion of the lumen of the tube by exfoliating membrane, and exhaustion from inability or refusal on the part of the patient to take sufficient nourishment and stimulant. If there is but little septic infection or if it is within forty-eight hours of the inception of the disease, the administration of 3,000 units of the diphtheritic antitoxin serum renders the prognosis favorable. If the patient has had the antitoxin some hours before the intubation is done, the chances of recovery are increased. So much importance do I place upon this that I estimate the length of time it is necessary for the tube to remain in the larynx from the time the serum is used rather than from the date of the operation.

TREATMENT.—Many cases are seen that, from neglect or from ignorance have been allowed to progress without proper treatment until the amount of septic infection has rendered the prognosis very grave. Since by antitoxin treatment the course of the disease is materially shortened and the time the tube is retained in the larynx is correspondingly shortened, the danger of broncho-pneumonia being a complication is very much lessened.

About thirty-six or forty hours after antitoxin has been administered, the membrane begins to loosen, and as the child coughs or even by the act of expiration, this may be forced into the tube, and, partially or completely, slowly or suddenly, so interfere with the respiration as to render the necessity for immediate removal of the tube proportionate to the amount of stenosis. It is not infrequent to be obliged to remove the tube temporarily for the purpose of cleaning. The greatest difficulty one encounters in the after treatment of these cases is feeding the patient. No medicine is required except, possibly, strychnine in some few cases. But milk and whiskey must be given in large quantities. There is always more or less difficulty in swallowing, as the epiglottis cannot be closed tightly over the head of the tube; yet it is surprising how readily some children learn to drink while intubated. The difficulty is, as a rule, in proportion to the amount of swelling of and about the epiglottis. It is usually recommended that the child be placed in such a

position that the head is lower than the body, so that when drinking, the liquid is kept by gravity from entering the tube. If the patient is old enough to feed himself, I find that by placing him in an upright position and allowing him to take the cup in his own hands, and, without assistance or urging from others, he be given a chance to drink, he will usually do so. He will take a few swallows, then he will cough, then he will drink again. If any attempts are made to help him or urge him, he will soon refuse to take more. Semi-solids, such as custards, ice cream, soft-boiled eggs, etc., are usually taken with ease, provided the same care is exercised as when liquid nourishment is being given. In very young children and in others, when the quantities of milk and whiskey taken are not satisfactory, rectal alimentation can usually be successfully practiced for the short time required. My rule for small children is to give, every three or four hours after the bowels have been washed out, an enema of an ounce and a half of predigested milk and a half ounce of whiskey. This is usually retained, but if it is not, I add a few drops of tincture of opium. This not only controls the bowels, but quiets restlessness and cough and reduces the number of respirations. It is possible when the patient cannot be nourished and stimulated either by the mouth or by the rectum, to sustain the patient for a short time by using, at intervals, whiskey, hypodermatically, and strychnine by the mouth, depending entirely upon the stimulants.

To extubate is, at any time, to a great extent experimental. Many intubationists prefer to defer this until all probability of its being necessary to replace the tube is past rather than to risk the possibilities of being obliged to reintubate. I do not believe in this course, as I am of the opinion that the larynx should be freed from the tube as early as possible with safety to the patient. In several instances in which I delayed in removing the tube there was sudden occlusion of the tubes by loosened membrane and almost immediate death. It is for this reason, more than for any other, that I favor early removal of the tube. Even if it is necessary to reintubate, the loosened membrane is removed and the tube is cleaned.

In extubating I am influenced by the following conditions: When the temperature has dropped to 99° or less, and the child

is bright, and takes an interest in persons and play-things; when there has been an exudate upon the parts that can be seen and that has disappeared, and when the child is not able to take a satisfactory amount of nourishment.

Extubation is somewhat more difficult than intubation. In the latter case the operator has control of the tube, while in the former he has to get control of it. There are many devices for removing the tube, but that most commonly used is that of O'Dwyer. This is a sort of curved forceps with a bill the shape of the opening in the tube and somewhat roughened on the outer surfaces. It is kept closed by a spring and opened by the pressure of the thumb upon the upper part. A set-screw upon the under side regulates the degree to which it can be opened. Care should always be taken to have this adjusted to the proper size necessary for the removal of the tube. If this is not attended to great damage may be done to the upper portion of the larynx.

Dillon Brown has devised a simple but excellent extractor. This consists of a small hook attached to a ring, to be placed upon the end of the left index finger. The purpose is to remove the tube by hooking into the hoop soldered on to its head. This, of course, requires a specially constructed tube.

The position in the management of the child is the same in both intubation and extubation. Assuming that it is the O'Dwyer extractor that is to be used, after having the patient in position and the gag in place, pass the left index finger down until it rests upon the posterior portion of the head of the tube, being careful not to have the finger far enough forward to obstruct respiration, as this will make the child struggle and increase the difficulty in placing the extractor into the opening of the tube. Now pass the extractor along the palmar surface of the finger, keeping the handle in the median line of the body until it touches the tube in front of the finger, when, by gentle manipulation, it will be felt to drop into the opening. Then press firmly upon the thumb-piece and withdraw. When the child is in the correct position this is usually very easily done. But when the child is not kept in the proper position or when there is any deviation of the handle of the extractor from the median line it is quite difficult.

One should not leave the patient for at least a half hour, as dyspnea may return and reintubation be necessary. It is well

to give an opiate to allay the cough. I always recommend, when practicable, that this be given an hour or so before extubation so as to have the patient well under its influence, thus avoiding excitement on his part as well as allaying irritability of the larynx.

It occasionally happens that after the original trouble for which intubation was done has disappeared, it is impossible to remove the tube from the larynx without dyspnea returning, necessitating the return of the tube. Such a condition is termed "retained tube" and may last weeks or months unless properly treated. O'Dwyer, the authority upon all matters pertaining to intubation, in a paper read before the American Pediatric Association, in May, 1897, said that "the cause of persistent stenosis following intubation in laryngeal diphtheria can be summed up in a single word—'traumatism.' Paralysis of the vocal chords may possibly furnish an occasional exception to this rule."

The reason of the traumatism may be a tube that does not fit, one that is imperfect in its construction or injury to the tissues by unskilled operators. Undoubtedly most of the cases of retained tube are due to the tube being too large, notwithstanding the size designed for the age has been used. This condition has most frequently happened when the 3 to 4 size has been used.

If the pressure is great enough to seriously interfere with the circulation, even if it does not cause ulcer, there will be an edema of the surrounding tissue. The tube being withdrawn, the pressure is suddenly removed and the submucous tissue becomes infiltrated, and being surrounded by cartilage, can swell in but one direction, thus obstructing respiration, by narrowing the lumen of the larynx. Sometimes the head of the tube, by making undue pressure upon the parts upon which it rests, causes an abrasion, from which granulations spring, and as the tube is removed, these drop down into the chink of the glottis and obstruct respiration. There may be complete destruction of the cricoid cartilage, and in this case when the tube is removed, there will be a collapse of the walls. Nothing can be done to cure this condition, which is fortunately rare.

When the lesion is in the sub-glottic region a cure may be effected by removing the pressure so as to allow the normal circulation to be restored. This is done by using a tube having

the same sized head and retaining swell as the one first used, but the portion of the tube between the head and swell should be one or two sizes smaller, thus doing away with the pressure of the larger tube.

When the retention is due to granulations, the tube must be changed for one with the head built up so as to rise above and rest upon the granulating tissue, and by pressure assist in their destruction. It is by no means easy to determine which of these conditions exists, as it is practically impossible to use the laryngoscope, and the sense of touch is imperfect. Except for the satisfaction that one feels in knowing just what the condition is, it is unnecessary to differentiate, as one may have a tube constructed so as to embrace both the narrow body and the built up head, thus treating at the same time either or both of the conditions. Such a tube must be worn by the patient until the lesions causing the retention of the tube are completely cured. The sooner one recognizes that he has a case of retained tube, and adopts the proper treatment, the shorter will the time be that the special tube must be worn.



A GROUP OF UNUSUAL CASES.*

CASE 1.—Secondary Pulmonary Hypertrophic Osteo-Arthropathy Complicating Pott's Disease in a Child.

CASE 2.—Cyst of the Femur Complicating Bilateral Coxa Vara, in a Child.

CASE 3.—Pott's Disease of the Thoracic Region, in which an Abscess was the Direct Cause of Death.

By ROYAL WHITMAN, M.D.,
New York.

(CASE I.)

THE patient, a girl, 2 years of age, was first seen at the Hospital for Ruptured and Crippled in May, 1893.

She was brought by her mother because of a "lump" on the back that had attracted attention two weeks before, but from which she had appeared to suffer no particular discomfort.

Both paternal grandparents had died of phthisis, and the father had, in childhood, suffered from a "running sore" of the foot, apparently caused by tuberculous disease of the tarsus. The mother's health was good; one older child was living, and in good condition; one had died of pneumonia in infancy.

On examination it was noted that the child was in excellent physical condition. The "lump" was an angular projection at the tenth dorsal vertebra, and it was accompanied by slight, although characteristic, symptoms of Potts' disease. At this time a plaster jacket was applied. Three months later, psoas contraction on the left side appeared, and a deep abscess was detected in the iliac fossa. The contraction and the attendant limp persisted for about six months. The abscess disappeared without special treatment.

The case progressed favorably until the Summer of 1896, when the patient suffered from a severe, prolonged, and exhausting attack of whooping cough, which left behind a persistent cough and expectoration. In January, 1897, a peculiar enlargement of the fingers was noticed by the parents. This was attributed to frost-bite, and was treated for a time with

* Read at a meeting of the Orthopedic Section of the New York Academy of Medicine, January 20, 1899.



CASE I.

applications of iodine. Two months later the child began to walk with a feeble, shuffling gait, and to complain of pain in the knees and ankles. At this time the examination showed increased patella reflexes and ankle clonus, evidently the early symptoms of paraplegia. There was marked swelling, caused by effusion into both the knee and ankle joints, and enlargement of the terminal phalanges and finger-nails of both hands; dullness and râles at the apex of the left lung, persistent cough and abundant expectoration.

The indications appeared to be those of a rapid and general advance of the tuberculous disease, and soon after, the child was admitted to another hospital and passed from observation for several months.

The enforced rest relieved the threatening symptoms of paralysis; the diagnosis of tuberculosis of the lungs was confirmed.

After her discharge, and during the Summer of 1898, there was a marked improvement in the general condition, and although some swelling of the knees and ankles persisted, the discomfort was completely relieved by anti-rheumatic treatment. Meanwhile the hypertrophy of the nails and the clubbing of the terminal phalanges of the hands, and to less extent those of the feet, had become more noticeable, and had attracted much attention from the various physicians who had seen the child. It was supposed to be an extreme instance of so-called Hippocratic fingers, due to the obstruction of the circulation caused by the disease of the lungs, although this was progressing favorably.

Last October recurrence of the pain and increased swelling of the joints of the lower extremities brought the mother and the patient to the Vanderbilt Clinic for a further supply of the anti-rheumatic medicine (salicylate of soda), that had been so efficacious on the previous occasion.

At this time the physical examination showed thickening and enlargement of the bones of the lower arms and sensitiveness to pressure, and swelling of the wrist-joints, symptoms that had not been noticed by the mother. This made a diagnosis clear, and at once connected the clubbing of the fingers, the arthritis, and the enlarged bones as symptomatic of the affection known as secondary pulmonary hypertrophic osteoarthropathy.



CASE I.

The present state of the patient may be summarized as follows:

She is nearly 8 years of age, is rather under-sized, but is in fair physical condition. There is a moderate kyphosis, and rigidity of the lower dorsal region, but no muscular spasm, no trace of abscess, no contraction, an apparent cure of the disease of the spine. The expectoration is moderate in amount, and thus far examination has shown no bacilli. There is slight dullness at the apex of the left lung, and increased respiratory sounds at the base of the right lung.

The most marked peculiarities are the disproportionate size of the hands as compared with the size of the child; and of the lower arms and legs as compared with the upper segments of the extremities. The knees, ankles, and wrists are enlarged, evidently by an effusion into the joints and by thickening of the capsules and surrounding parts. This effusion is not accompanied by redness, heat, or by muscular spasm. Motion is very slightly limited mechanically in the affected joints. The terminal phalanges are very markedly enlarged, an enlargement that would be more noticeable but for the general thickening of the fingers. The nails are rose-red in color, not particularly thickened or curved, but nearly double the breadth of the normal nails. The fingers, the hands, and the lower arms to about the middle are sensitive to pressure and enlarged, this enlargement being due, evidently, to a change in the underlying bones.

The same clubbing of the terminal phalanges and hypertrophy of the nails is present to a less degree in the feet and sensitiveness to pressure on the thickened bones of the lower leg. The hip and shoulder joints and the component bones, as well as those of the trunk, are normal. The face and head show no sign of disease.

The more important measurements are: Height, forty-two inches; weight forty pounds. Circumference of the limbs in centimetres:

Right thigh, 20; knee, 23, 24, 22.8; calf, 21; ankle, 19.5.

Left thigh, 26.5; knee, 24, 26, 23; calf, 20; ankle, 18.5.

Right upper arm, 12.5; lower arm, 14; wrist, 13.

Left upper arm, 12.5; lower arm, 13.5; wrist, 13.

Terminal phalanx of right thumb, 5.8.

“ “ left “ 5.5.



CASE I.

Terminal phalanx of right middle finger, 4.6.

Breadth of base of right thumb nail, 2.

“ “ left “ “ 2.2.

To put it briefly, the circumference of the lower arms and of the wrists is greater than that of the upper arms, and the knees are larger than the thighs, giving one the impression of atrophy of the thighs and upper arms. The circumference of the phalanges and the breadth of the finger nails is about twice as great as those of normal.

The accompanying Roentgen picture of the hands and forearms demonstrates the deposit of new periosteal bone upon the phalanges and metacarpus, the increase in size and the irregularity of the distal extremities of the terminal phalanges, and the enlargement of the radius and ulnar.

The nature of the affection of the bones in this disease appears to be a form of malacia, in which the organic material is somewhat increased and the mineral substance correspondingly diminished, so that the structure of the bone is somewhat weakened. But the characteristic change is a deposit of new bone beneath the periosteum of the shafts of the phalanges upon the metacarpal and metatarsal bones and upon the lower third of the bones of the lower arm and leg. This chronic hyperplastic periostitis is accompanied by local sensitiveness, by sympathetic arthritis of the neighboring joints, and by clubbing of the terminal phalanges and hypertrophy of the finger nails. This latter peculiarity is graphically described by French writers as follows: "The finger is shaped like a drumstick, the nail is elevated like a watch-glass and is curved over the finger end like a parrot's beak."

In all of the reported cases, upwards of eighty in number, the affection was secondary to chronic disease of other parts; in about 75 per cent. to tuberculosis or suppurative disease of the lung or of its covering, hence the qualification pulmonary. On this account but little is known of the final outcome; it appears, however, that the progress of the local affection of the bones and joints corresponds somewhat with that of the original disease.

The cause of the periosteal and other changes is supposed to be the absorption of irritating substances from the focus of suppuration in or about the lung combined with impaired cir-



CASE I.

The deposit of new bone, obliterating the incurvation of the shafts of the metacarpal and phalangeal bones is very evident; the change is most marked in the metacarpal bones of the thumbs and of the fifth fingers.

culatation. Thus, the first evidences appear at the ends of the fingers and in the finger nails.

Thayer, the most recent writer on the subject, who has reported four cases in adults, suggests that the hypertrophy of the bones is analagous to the hypertrophic amyloid changes in the internal organs that sometimes occur after prolonged supuration elsewhere (*Phil. Med. Jour.*, November 5, 1898.)

The affection was first described by Bamburger in 1889, but independently by Marie, who differentiated it from cases of acromegalia, with which it had been confounded.

It is a rare disease, and particularly so in childhood. In fact, this is, I believe, the first typical case that has been reported.

Lefèbre concluded that adult age was necessary to its development, as he had found no cases at hospitals for children where empyema and diseases of the lung were very common. (*Thèse de Paris*, 1891).

Since then several cases in which the terminal phalanges were enlarged and the finger nails hypertrophied have been reported—two of these by Gillet. The first, an instance of typical hypertrophy of the terminal phalanges of the fingers and toes, in a boy 12 years of age, who suffered from emphysema and dilatation of the bronchi; and a similar case in a girl, secondary to empyema. (*Annals de la Polyclinique de Paris*, 1892, ii., p. 98.

Moizard has reported two cases also. In the first case, the phalangeal enlargement was observed three months after an empyema that followed pneumonia. The second case was similar. Both the enlargement of the phalanges and the hypertrophy of the finger nails diminished markedly during the stage of recovery from the empyema. (*Soc. Méd. des Hôp.* May 12, 1893.

Marfan mentioned, in the discussion of these cases, three others, two in connection with disease of the lung, and one following pyelonephritis without lung or heart complications.

Moussons described a case of hypertrophy of the terminal phalanges secondary to empyema, which appeared soon after its onset and decreased during recovery. (*J. de Méd. de Bordeaux*, Oct. 10, 1890,

These observations correspond with the conclusions of Gillet, that the affection in childhood has little tendency to

invade many bones, but is practically limited to the terminal phalanges.

It most often follows empyema; it may be unilateral even, of the hand corresponding to the side of the chest that is the seat of disease. The hypertrophy may appear within a few weeks after the onset of the empyema; it may increase during its continuance, diminish, and finally disappear after its cure.

It is questionable, however, if these cases can be included properly under osteo-arthritis. If so, it follows that clubbing of the fingers is the first stage of that affection, and that the so-called Hippocratic fingers is nearly allied to it; but as it appears that clubbing of the fingers is not uncommon, while the further changes characteristic of osteo-arthritis are rare, it may well be, that these are, in reality, two distinct affections, though allied in cause. At all events, osteo-arthritis is a very remote result of disease of the lungs in childhood.

It is one of a group of obscure diseases of the bone that includes osteo-malacia, osteitis deformans, and the like, whose causes are imperfectly understood and for which treatment is of little avail.

It is useless to speculate on etiology until more cases have been described and more accurately described. A practical point that suggests itself is, that the cases of clubbed fingers secondary to disease about the lung should be more carefully examined to see if a connecting link between them and true osteo-arthritis, as illustrated by this case, can be clearly established.

The more important references to articles, aside from those mentioned in the text, are as follows:

1.—E. Bamberger—Veränderungen der Röhren Knochen bei Bronchiektasie, Wiener Klin. Wochenschrift N. 4, 1889.

2.—P. Marie—De l'ostio-arthropathie hypertrophique pneumique. *Révue Méd.*, 1890, x., p. 1.

3.—Teleky—Wiener Klin. Wochenschrift, 1897, No. 5.

4.—R. Massalongo—Il. Policlinico, 1897, p. 572.

5.—Deutsche Chirurgie, L., 28, 1898.

To articles 3, 4, and 5 an extensive bibliography is appended.

A CASE OF EPISPADIAS AND MENINGOCELE.*

By WM. S. NEWCOMET, M.D.,

Registrar to St. Agnes' Hospital; Assistant in Medical Dispensary, University of Pennsylvania, etc.

IT seems that epispadias is more liable to be complicated with other deformities than hypospadias, as was true in the following case; but the complication which ended the child's life would seem to make the facts especially worthy of attention:

The birth of the child was easy; and as the posterior portion of the head passed over the perineum, a small tumor, about the size of a walnut, followed. After delivery, upon tracing the umbilical cord, it was found that it did not enter the abdomen near its natural location, but about an inch and a half lower down, toward the symphysis; below this, included in the same opening, was the penis, which was completely divided on the upper side, from its base to termination. The mucous membrane of the urethral tract showed distinctly in the middle, from the red tissue of the spongy body, by its shiny or glazed appearance. Between the penis and umbilical cord was a surface of red membrane about three-eighths of an inch wide. Otherwise the baby appeared to be well formed, while breathing and heart action were normal.

Being tired, a careful examination was deferred, and two days later, when a careful examination was made, these deformities were found to be greatly changed; the tumor, upon the head, had grown to about twice its former size, the lower and right side showed such marked thinning that fluid oozed through and dried over it in a crust. The baby cried upon the least manipulation of it, and had to be kept constantly on its side. When it cried the tumor became very tense, and transmitted light, as does a hydrocele; no opaque body or shadow could be discovered. When it stopped crying it became much smaller and shriveled, losing to a great extent the opalescent appearance it presented when tense.

*Read before the Philadelphia Pediatric Society, November 8, 1898.

The head of the child was moderately well covered with hair, which seemed thicker over the posterior portion of the scalp and around the base of the tumor; while over the remaining part of it was a scattered growth, which appeared all the more so when it was stretched.

The pedicle, in circumference, was about the size of a five-cent piece, and seemed to be directly over the occipital fontanelle, although lower than usual.

While this change had occurred about the head, the umbilical cord and penis were now separated by a mass about the size of a hickory nut. The cord entered the mass from above downward, instead of from before on its upper margin, a little to the right.

The color was a dull red, much like mucous membrane of the lips; the upper two-thirds was dry, while the lower one-third was moist and bled easily.

It proved to be a rupture, everting a portion of the anterior wall of the bladder; pressure upon the mass would reduce the rupture, causing about a drachm of urine to be passed, while pressing back the remaining portion exposed the bafund of the bladder and showed the ureters as two small teats.

While the penis was much higher than normal, the scrotum and testicles were in their normal position.

Although the bladder was opened to its full width, the anterior wall acted as a flap, and retained the urine passed from the ureters until, by straining while crying or by pressure, the urine was voided; this enabled the child to keep dry, and the skin around the opening was in as good condition as a normal child, even in hot weather.

With both these deformities the child was fretful and difficult to handle. The tumor over the occiput was becoming larger, while its walls were growing thinner and more of this watery fluid was oozing through to dry over its surface and macerate the surrounding scalp, which, with the heat of the body and weather, became offensive. Operative interference was postponed, day after day, until the baby was four weeks old, when it looked as though the slightest pressure would rupture it, and believing this would soon occur spontaneously, it was decided to interfere. The hair was cut and the scalp was washed with an antiseptic solution. Around the pedicle

a small ring of cotton was placed, and over the cotton the wire of a snare (the cotton kept the wire from cutting while the snare was tightening). The child was carefully watched for symptoms of intercranial pressure as the wire was drawn tight enough to cut off all circulation. This being accomplished, two needles were passed through the constricted pedicle, at right angles to each other, and the silk tied as in operation for nevus. The black and sunken slough was removed the next day, after which it was dressed every other day, and in about three weeks was healed completely, leaving a scar the size of a dime, half an inch below the occipital fontanelle.

From birth the child always had diarrhea, at times passed small quantities of undigested milk, and for a while it looked as if it had little or no control of its anal sphincters. Considering that it was ruptured at both inguinal rings and also at the navel, it was then rational to suppose the irritation of the bowel due to this cause, as these could not be controlled by pressure; hence, from time to time astringent and digestive medicines were given. The child, however, grew, and was of good weight, when, on December 6th, ten weeks after birth, it was taken with a convulsion; thinking it was due to some bowel disturbance, digestants were pushed, with a small dose of bromides. The following day the child was greatly changed, it had purged to such an extent that it seemed devoid of all liquids; the skin was dry, features pinched, and over its body were a few petechial spots. The rupture at both rings and umbilicus had retracted; the belly was flat, and after another spasm on the 9th, it became comatose and died on the 10th.

The following notes of the post-mortem are interesting, for they show how easily, while watching one portion of the body carefully, other parts become deranged: Upon opening the abdomen, the cavity was found normal; the finger could be introduced up to the first joint in the umbilical rupture, and to the second joint in both inguinal canals, but not descending into the scrotum. The bladder could be turned inside out like a sack. The ureters were normal. The symphysis was wanting entirely, by one inch. Between the two ascending rami was a space about three-eighths of an inch. It appeared as if the pubic bones were entirely missing, while the intestines and stomach showed nothing unusual. The right kidney disclosed a number of small abscesses, varying in

size from a millet seed to a pea; the color of the remaining area was a yellowish red, and the left was firmer, not so yellow, but showed two distinct foci. The remaining organs were normal.

Upon opening the cranial cavity, the brain and membrane were normal, and, curiously, the meningocele did not come through the occipital fontanelle, but from a small opening, one-quarter inch in diameter, in place of the occipital protuberance, where the dura was firmly attached, while on the outside of the scalp it was held by a small band, three-quarters of an inch long, leading up to seat of the scar.

No doubt the child's death was caused by infection of the kidneys through an open bladder, which probably did not show until acute sepsis set in.



EDITORIAL COMMENTS

Diphtheria Antitoxin in Chicago

The report for the month of November of the Chicago Department of Public Health is very pleasant reading for those who are strong believers in the effective curative properties of antitoxin in cases of diphtheria. There seems to have been latterly a tendency on the part of a section of the medical profession in this country and of a far larger number of the healing fraternity in European countries and in Great Britain to endeavor to belittle the efficacy of diphtheria antitoxin and to contend that the benefits derived from its use have been exaggerated, but the statistics at hand from Chicago will doubtless strengthen the position of the adherents to serum-therapy. Of 102 cases of diphtheria in Chicago in which the Klebs-Löffler bacillus was found, and which were treated by antitoxin, 97 recovered 2 remained under treatment, and 3 have died, giving the extraordinary low death rate of 3 per cent. Since the Health Department of Chicago introduced the antitoxin treatment for diphtheria, in 1895, a period of 26 months, a saving of life to the city is reported of 1713, due to the use of antitoxin. These are most remarkable figures, and if statistics are worth anything at all, and are not, as the late Dr. Black was in the habit of saying, "like sausages, due to the old woman who made them." should put to rout the critics of the immortal discovery.

A New Serum for the Treatment of Diphtheria

While we are on the subject of diphtheria, it may be as well to mention that the news has come from Europe that a Dr. Weisbecker has treated thirty children suffering from diphtheria with the serum obtained, not from an immu-

nized animal, but from convalescent patients. The New London *Medical and Surgical Review of Reviews*, referring to the discovery, says: "All of these cases could be looked upon as potentially severe, from the character of the prevailing epidemic. The death rate with the new serum, but also including cases which received no injections, was 12 to 13 per cent." In some respects the serum resembles Behring's, but in others it differs. The chief points of difference are said to be that often the serum seems to have no effect on the temperature or on the local process. The former may continue to rise and the latter to spread after an infection. When, however, laryngitis is present the above rule does not apply, and it is claimed that the serum has a specially favorable influence on the laryngitis. Again, the statement is made that only one injection is necessary. If the first fails, it is useless to repeat, and lastly, the sequelæ are said to be less common than after the use of ordinary antitoxin. Of course, if the new serum can be shown to be all that is claimed for it there can be no doubt that it will prove a formidable rival to Behring's, but until it has undergone a much longer time test, and in the face of the wonderful results recorded in Chicago and elsewhere, judgment must be deferred.

Determination of Sex

Dr. Schenck's theory as to the determination of sex has, since its promulgation, received many severe blows. In fact it has nowhere received much credence. In the December issue of the *American Journal of Obstetrics*, Dr. J. S. Hammond, reporting 1,000 cases of labor, says the ability to determine sex of the child antepartum by the rate of the fetal heart-beat, after careful investigation, he is certain there is nothing in it. He says there is only one chance to guess wrong in all cases, and to predict correctly is but a coincidence. He is inclined to pin his faith to the Chinese method, which is as follows: "Ascer-

tain the number of the month upon which the woman became pregnant and compare this with the number of years representing her age. If both numbers are odd or both even the sex will be male. If one is odd and the other even, the sex may be expected female. Thus, if a woman is to be confined in October, she became pregnant in January; January is the first month. If she is 24 years old at the time, we should expect a female. If 25 years of age, we should expect a male. The theory that in the time of war the birth of males predominate, has, according to reports, received striking confirmation in this country during the last two months. Statistics show that there has been born within this period a large excess of males over females. Dr. Schenck explains this as due to the patriotic enthusiasm evoked among the women by the war. Another reason given is that, owing to her exalted feelings, the American women ate more, and hence she was in better physical condition and accordingly gave birth to boys. The German professor claims, lastly, that a large number of American women followed his system and, as a matter of course, produced children of the male sex. The fact, however, should be borne in mind, and we would bring it to the notice of any American woman who may be intending to adopt Dr. Schenck's plan, that the system may be carried to extremes. We can't get along without girls, and it would be no less than a grave public calamity if the boys were to exceed the girls say by 2 to 1.

**The Color of Newly Born
Negro Infants**

Our remarks in PEDIATRICS of a few weeks ago, with reference to the color of newly born negro infants, has raised a storm of discussion. We quoted Dr. Farabey, not as in any way holding ourselves in accord with his views, but simply as the decided expression of opinion of a medical man who had had some experience in the matter. However, there can be little doubt that the French physician was wrong. All the doctors

writing from the States where negroes are numerous agree that at least a piccanniny is not a "tender pink color" when it first sees the light. The *Medical News* of December 10 devotes a short editorial commenting on the reference made by the London *Lancet* of November 26 to the article in this journal. Our able contemporary seems inclined to wonder that the *Lancet* should esteem it worth its while to notice so trivial a matter as the color of newly born Negro babies, and suggests that the question is one that can be decided without much difficulty. So far as the triviality of the subject is concerned the *Medical News* is right, but that it possesses much interest for medical men has been clearly proved by the voluminous correspondence that has taken place, and after all more noise has been often made and more vehemence displayed in arguments over questions even less important. As to the ease with which the point can be settled, we must take issue with the conclusions arrived at by the *Medical News*, for as the *Lancet* shows, the medical men in America, who have had long experience among the Negro population, are not altogether of the same mind. Nevertheless it may be taken as decisively proved that the Negro newly born is not of a tender pink hue, neither, it may be said, is it as black as the proverbial crow, but rather we should say, "it is a sallow or creamy white, without the pink glow or tinge that marks the scions of Circassian origin." It is to be hoped that ere long by a consensus of opinion of these physicians who practice among the black race that the color of their infant progeny will be decided for once and ever.

**Weighing of Infants in the
First Two Years of Life**

At the meeting of the Philadelphia Pediatric Society, held on November 8th, Dr. J. P. Crozier Griffith read a paper on the above subject, and exhibited a new weight chart devised by himself. He then reviewed the investigations made upon the physiological loss in weight during the first

day of life by different observers. In the discussion that followed, the most instructive remarks were made by Dr. D. J. Milton Miller, who drew attention to two points. The first of which was as to the average weight of a child at the end of the first year. That the average, 20 lbs., given by Holt, is an underestimate, is probably the opinion of most medical men who have had experience of general practice, and Dr. Miller emphasized this fact by the records he kept of three children, all of whom weighed at the end of the first year more than 20 lbs., as well as weighing within an ounce or two of the same weight. Dr. Miller gives a very plausible explanation for the low estimate usually given. He thinks that the fact of the recorded cases being almost invariably work-house children will account for the discrepancy. The other point noticed was that it is unnecessary to weigh an infant too often on account of the somewhat remarkable daily variations which are calculated to alarm a too anxious mother. With this opinion also most physicians will agree. Dr. Potel, of Paris, in 1895, supplied some interesting information on the weight development of prematurely born infants. He came to the conclusion that the loss in weight during the first three days of extra-uterine existence is not more marked than in infants born at term, but it constitutes a serious event in these prematurely born beings, and it is precisely during this period that the mortality is the heaviest. The offspring of parents free from hereditary taint are, however, more resisting. The gain in weight begins later, and proceeds at a slower pace the more prematurely the child is born. Thus in six-and-a-half-month children a gain in weight is frequently noted only after the first two weeks. The nearer to full term the infant is born, the closer does the progress in weight approach that of the normal child.

SOCIETY REPORTS

PROCEEDINGS OF THE PHILADELPHIA PEDIATRIC SOCIETY.

December 13, 1898.

F. A. PACKARD, M.D., President, in the Chair.

Dr. BERTHA LEWIS and Dr. F. MASSY exhibited a girl, 10½ years old, with a deformity of the chest. The left side was flattened anteriorly, and markedly concave posteriorly; there was also a rotary lateral curvature with a right dorsal major curve and left lumbar rotation. These conditions were induced by the inactivity of the muscles of the entire left side of the trunk, consequent upon the absence of all active lung tissue on that side, and the excessive work done by the right lung and the muscles of the right side of the trunk. The history showed the child to have had catarrh of the lungs when eight months old, but no definite history of pneumonia could be gained.

The heart was drawn well over to the left side, the absolute and relative dullness being almost the same.

DISCUSSION.

Dr. E. E. GRAHAM.—I am very much interested in the exhibition of this case, but my interest is more in the line of treatment than in the actual diagnosis in this special child. I should like very much if the other members would care to see it, to have Dr. Lewis show us the movements this child has been asked to go through. A number of these cases are seen at all clinics, and their treatment is generally unsatisfactory, the child is given a tonic or sent to a orthopedic surgeon, who rarely has time to devote to it, or it is sent to a manipulator, if the parents are able to pay for such instruction. I think the movements this child is asked to go through would be extremely interesting to witness.

Dr. S. M. HAMILL.—The cardiac condition in this case suggests the report of a case which I abstracted from one of the English journals a few days ago. There was an area of

pulsation on the right side of the chest in the fifth interspace, just within the midclavicular line. Over this area the heart sounds seemed to be of normal loudness. The area of cardiac dullness seemed to be entirely to the right of the sternum, but could not be delimited on account of the almost complete tubercular consolidation of the right lung. There was an absence of pulsation and dullness in the normal area, with very feeble sounds. At the autopsy the heart was found to be in the normal position. It was completely covered by the hypertrophied left lung which extended to the median line. The upper lobe of the right lung was occupied almost entirely by a large cavity, and the lower lobe was consolidated. The abnormal location of the sound was supposed to depend upon transmission through the consolidated lung, augmented by the resonating effect of the adjacent cavities. The cause of the abnormal impulse was not revealed. In the case under consideration there is doubtless some pulmonary condition to account for the extensive abnormal pulsation.

Dr. LEWIS then demonstrated movements with the child.

Dr. S. M. HAMILL.—I should like to ask Dr. Lewis if, in cases similar to this, where such a course seems indicated, she gives any movements directed to the development of certain groups of muscles.

Dr. LEWIS.—We do later on. When we have under control the coördinated movements of the lower extremities, so that the child can assume the upright position, and maintain that correctly. I think it a mistake to begin asymmetrical movements until you have pretty good control of the extremities with symmetrical movements. So with spinal curvature; I never go on with asymmetrical movements until I have obtained a fair degree of muscular tone and development with the symmetrical movements.

Dr. F. MASSEY.—I have watched this case carefully for two months. More expansion of the lung and covering of the heart has been accomplished in the last three weeks than in the previous month.

Dr. E. E. W. GIVEN exhibited a case of Cretinism. The family history was negative, with the exception of a record of pronounced alcoholism in both parents. There was no history of goitre in the family, but an indefinite history of goitre in the neighborhood in which the child was born (Ireland) was elicited. The child's infancy had been without any notable abnormality; excepting that it was always easily provoked to anger. When seen in its twelfth year it held its mouth open; the tongue protruded somewhat between the lips, but was not enlarged. The thyroid gland could not be felt. The skin was rather thick and rough. The hair, however, was fine and silky. The fingers were thick and clumsy, and were the most marked evidence of cretinism that the child exhibited, with the exception of weakly mental condition, which was about equal to that of a child of 7 or 8 years of age; and its small stature, its height being but 101 cm.; its weight, too, was but 46 lbs. The temperature taken at various times was usually about 100 2-5; the pulse averaged about 128, and the respirations 26. It was put upon thyroid on November 29, and this was continued until the time of the report. Upon this treatment, 4 lbs. had already been gained. The child slept better; its appetite was better, and the bowel movement had occurred every day.

Dr. ROBERTSON.—I had the opportunity of watching this case with Dr. Given in my service at the Episcopal Hospital, and it seemed to me that we could never dogmatically assert that this is a case of cretinism; certain it is it does not conform to the mind picture suggested by the word cretin. It certainly is a case of dwarfism. I think we are justified in treating it with thyroid, however, for such cases of infantilism bear the same relation to cretinism that gigantism does to acromegaly, that is in both cases they are due to some aberrant glandular function in the one case of the thyroid, in the other of the pituitary. Still there are grounds for regarding this as a case of cretinism—the pendulous abdomen, the large and broad hands and feet, the history of the child having at one time gaping mouth, the impaired intellect; then, again, the fact that the thyroid is probably diminished in size. There is no telling what the histological structure of the gland is. It may be, and usually is, enlarged in the endemic forms, but in

the sporadic forms the thyroid is much diminished in size. That some thyroid function exists, however, is unquestionable. But it seems to me we can only come to a conclusion after the therapeutic test, the use of the thyroid gland.

Dr. D. L. EDSALL.—I am interested in the possibility of thyroid treatment having been administered before Dr. Given saw this case, and would ask him whether he has been able to learn whether thyroid extract has been administered or not. I have seen a number of cases of cretinism that have been under thyroid treatment for periods varying from several months to several years before I first saw them, and I am sure had I not known that thyroid extract had been given them, I should have been in quite as much doubt as to the diagnosis as Dr. Given expresses in regard to the case which he presents.

Dr. GIVEN.—As far as Dr. Edsall's question is concerned, I have no answer, as I do not know whether thyroid gland was ever given before I prescribed it. I believe, however, that the child had never had any treatment before it was brought to the dispensary of the Episcopal Hospital, and it was brought there chiefly because its stature was so slight that the parents felt ashamed to admit to their friends that the child was 12 years of age.

Dr. D. L. EDSALL reported a case of dilatation of the colon in a girl 10 years of age. The condition of the child upon admission to the hospital was that usually seen in severe dilatation of the colon, the abdomen being enormously distended, and the child's health having suffered severely during the past six months. The condition was due to excessive replication of the sigmoid, a long fold running over to the right and causing a sharp kink in the bowel, and thus a certain degree of obstruction. Treatment overcame the condition entirely for the time that the child was under observation, and her health improved greatly. Dr. Edsall expressed the opinion that abnormal folding of the large bowel was a cause of dilatation of the colon that must be considered of importance.

Dr. EDWIN E. GRAHAM reported a case of Ileo-Calitis, simulating Intussusception, in a child aged 6 years. The

child was delicate and nervous, and had a history of long-standing indigestion and constipation. When first seen, October 5th, 1898, she had been ill two days with fever, nausea and diarrhea. She had had eighteen stools in the past twelve hours, consisting of blood and mucous, and there had been marked tenesmus and moderate pain. No fecal matter had been passed. There was no abdominal tumor, and the abdomen was relaxed.

During the succeeding thirteen days the child's condition remained good, and the number of stools gradually diminished, but their character remained unchanged. Gas was passed a number of times, but no fecal matter. There was no abdominal distension, and no evidence of collapse.

On October 7, 1898, the index finger passed into the rectum disclosed a condition as follows: The tip of the finger, if kept in contact with the mucous membrane, entered a cul-de-sac about one-half inch deep. This cul-de-sac was easily followed about the entire circumference of the bowel, the central portion of the lumen of the bowel being occupied by a soft prolapsed mass. Houston's valves were believed to have played an important part in the case. In the empty state of the bowel, these valves, four in number, overlap each other, as Mr. Houston remarks, so effectually as to require considerable manœuvering to conduct a bougie, or a finger along the canal of the intestine.

The conditions present were as follows: The child had weak muscles, poor digestion, habitual constipation, and a relaxed condition of the mucous membrane above Houston's valves. To these predisposing causes of prolapse of the mucous membrane were added the active ones of proctitis, with swelling, inflammation, and infiltration of mucous membrane and tenesmus. The prolapsed mucous membrane entirely occluded the lumen of the bowel, at the position of Houston's valves, as far as the passage of fecal matter was concerned, but allowed the passage of gas.

The main facts leading to the non-diagnosis of intussusception in the present case were as follows: Absence of abdominal tumor, of distension of the abdomen, and of severe recurring paroxysmal pain, passage of gas from the bowel, and lack of evidence of marked prostration. The soft, prolapsed, non-inflamed mucous membrane could still be easily felt on

November 2nd. The child at this date was well advanced towards cure, and was having normal-formed movements.

Dr. H. A. HARE.—This case seems to me of very unusual interest. In the first place I think it shows how medical treatment will sometimes result in the recovery of a case, which the surgeon would have us believe could have recovered only under the knife, and I confess that if this patient had been my own patient, I would have called in a surgeon to operate upon it, without attempting medical treatment of any considerable length. Some years ago when Dr. Edward Martin and I wrote the Fiske Essay on Intestinal Obstruction, I think we completed the essay with the idea that intussusception did not always have to be carried out promptly, and I think our views upon that occasion were based on a theoretical consideration of the literature of the subject, rather than on practical experience. As my examination of the literature has been dwarfed by retrospection and increasing personal experience, I am inclined to believe that any other interference with cases of intussusception than operation is depriving a patient, in the majority of instances, of a chance for recovery which he might have. I do not understand how Dr. Graham made the diagnosis between the case being prolapsus and intussusception of the mucous membrane of the rectum, and I understood him to emphasize the fact that in a number of occasions fecal matter was passed. I suppose that was emphasized by Dr. Graham because in established obstruction, no fecal matter could come down through the bowel. On the other hand the child had a large number of movements day after day, and it is not possible that the lower bowel could have contained so large a quantity. If I saw a case to-night of prolapsed rectal mucous membrane, I am not sure that I would differentiate it from intussusception.

We learn more and more clearly the fact that purgative treatment is of no advantage where we find the bowel is blocked. I do not think I have ever seen a fatal case of volvulus, without necessity for regret that the attending physician had been so free with his purgatives. We should guard against delay in resort to operative procedures and, second, the free administration of violent cathartics, and I am also sure from a somewhat limited, but still increasing experience, that opera-

tive interference, if resorted to early, cannot do any harm, and may do an immense amount of good; so that I am inclined to look upon surgical treatment with greater favor than medical interference. I had a case about three years ago, in private practice, in which intestinal obstruction, due to inflammatory adhesion, was present, in which Dr. Kelly operated, and in which Dr. Martin and myself used high colonic irrigations in Dr. Kelly's presence. No good results were produced, and when a second operation was done to liberate the gut, it was found that nothing of the character of irrigation could have availed. I am inclined to think that in a volvulus, or intussusception, only in a very small proportion of cases is irrigation of much value. I think, too, that the method recommended by Mr. Jonathan Hutchinson, published ten or twelve years ago in the "Archives of Surgery," in which he instituted what is known as the "Shakewell" treatment, in which the bowel was filled with water, the patient inverted and held upside down by two policemen, and well shaken, had absolutely nothing to commend it, except Mr. Jonathan Hutchinson's great reputation. Within the last twenty-four hours I have read a paper by a very eminent surgeon, in which this so-called "shakewell" treatment is condemned in the strongest terms. These facts are perhaps not germane to Dr. Graham's paper, but I hardly feel inclined to let this opportunity pass without saying that I would have called in a surgeon without any such delay as Dr. Graham permitted. The mere fact that the child got well, without surgical interference is, of course, the most convincing answer to this view. Out of one hundred cases, it seems to me we should have a comparatively small percentage in which the results would be so good.

Dr. E. E. GRAHAM.—I agree very largely with what Dr. Hare says in regard to giving purgatives, and I gave my first purgative before I was convinced there was any actual obstruction of the bowel. In regard to the diagnosis in my paper, I say: The facts leading to the non-diagnosis of intussusception are: Absence of abdominal distension, absence of severe paroxysmal pains, absence of symptoms of collapse, passing of gas by rectum, pressure of prolapsed mucous membrane after appearance of formed stools. I have seen a number of cases of intussusception in the past few years and am firm in my be-

lief in the correctness of the diagnosis in the present case. In regard to obstruction of the bowels, I have looked the matter up very closely, so far as the standard articles on the subject are concerned, and I cannot find any case corresponding to the one here reported. The ordinary causes of obstruction are always enumerated, and the word enteritis is used in an article written by Dr. Keen, who narrates a case very similar to that related by Dr. Hare, in which, through inflammation, the mucous membrane of the bowel had become more or less adherent. The fact that prolapsed mucous membrane could be distinctly felt, makes clear to my mind the diagnosis, as I cannot possibly conceive how formed stools would pass through an intussusception unless the intussusceptum had left the intussusciens.

In regard to the question of tumor, I cannot agree with Dr. Griffith. I have seen a careful surgeon pass two fingers into the abdominal cavity and fail to find an intussusception. The majority of cases of intussusception have, after the first two or three days an abnormally distended abdomen. In the case I speak of it was not an easy matter for the surgeon to find the intussusception, in fact the incision had to be enlarged and the bowel drawn out before the intussusception, which was enteric and three inches in length, could be discovered.

Dr. FREDERICK A. PACKARD reported a case of intussusception in a child aged 9 months in which, on the second day of the illness, reduction was effected under the influence of ether by the injection of normal salt solution from a height of three feet. Prompt and complete return to normal conditions followed the reduction.

DISCUSSION.

Dr. HARE.—I would speak of an interesting attachment that could be made to the apparatus which Dr. Packard advocates. It is a simple U-shaped tube filled with mercury. We use a Y-shaped tube running from the glass ends into the rectum. The Y-shaped tube receives fluid and the U-shaped tube registers pressure, and if at any time the pressure exercised by that bowel is more than the hydrostatic pressure it will also register its pressure upon the mercury in the U-shaped tube. I believe in giving the liquid gently, so that the hydrostatic force will overcome the mechanical obstruction by a

gradual displacement of muscular fibres, rather than by suddenly exercised force. As soon as resistance takes place, the flow may be stopped instantly, and as the spasm ceases, the clip can be loosened and the flow gently renewed; and if this is done, I know that a larger quantity of fluid can be gotten into the bowel and retained than if it is not done. I know in experiments in the lower animals that we attempted, during a cholera epidemic abroad, that it was possible to flush the entire alimentary canal, but unless we used a manometer of this kind the spasm of colon became so great that it was practically impossible to use enough fluid. If we used this manometer, and simply allowed the fluid to flow in when the abdominal walls were not resisting the flow, after a time there would be a gurgling sensation, and a very few minutes later fluid would gush out of the mouth, proving that by gradual pressure we could overcome resistance. I was glad to hear Dr. Packard say that hydrostatic pressure should be only 2 feet above the patient's buttocks. There has been much discussion as to the height to which the reservoir may be elevated above the patient. In a recent book on Practice we were instructed to hold the syringe from 20 to 30 feet above the head of the patient, evidently this was a typographical error in the first edition, which is perpetrated in the second. The 20 or 30 feet would have given such a pressure that it would have ripped things up from one end to the other. Dr. Senn, in a published paper, claimed that a pressure of more than 5 feet would produce rupture of the peritoneal coat of the gut, if it did not cause rupture of the other coats. In the experiments by Dr. Martin we found we were unable to produce rupture of the gut in lower animals with such pressure.

Dr. HAMMOND.—I would like to ask Dr. Packard if the intussusception was low down. I believe when the intussusception is in the lower flexure it is really a medical case, for the first forty-eight hours at least. In cases in which the intussusception is higher they are obviously much earlier surgical cases, and the matter of earlier differentiating the location will save much time and probably life, giving opportunity to call the surgeon early when the intussusception is high up, while when lower the case may be trusted to medical efforts no longer.

Dr. F. A. PACKARD.—In regard to this question of injections, last year I spoke in a paper, read before this society, and have nothing to add, but wish to repeat that it seems to me to be the greatest folly to state that you may raise the reservoir 3 feet on the first day, but that, if your case is of five or six days standing, you may travel up stairs with the reservoir until you get to the top of the house. The child's bowel is presumably in better shape to stand pressure without ripping in the first few days than on the fifth or sixth day. While I do not believe it is justifiable to use high pressure at any time, it is more dangerous after five or six days than at first, as at the former time pathological changes have certainly occurred that lessen the resistance of the bowel wall which, even when healthy, can be rapidly ruptured by too great a pressure.

Dr. H. A. HARE demonstrated on the blackboard the use of the U-shaped tube.



PRACTICAL NOTES

The Action of Drugs in Children.—Dr. J. B. McGEE says that while as few drugs as possible should be given to children, when indicated they should be used freely. We should know what a drug cannot do as well as what it can do. In most children the tendency toward recovery in slight ailments is very strong. Medication should be simple. Medicine eliminated rapidly should be frequently repeated, such as alcohol, nitroglycerin, the ammoniacal salts, aconite, and belladonna. Digitalis is cumulative and should be given at wide intervals. Pills and powders are not easily taken by young children. Active principles and remedies in small bulk are to be preferred. Salol and sulphonal in pill or tablet may pass through the intestinal canal intact. Glycerine is a better vehicle than syrup, especially in summer. With the exception of opium and its alkaloids, larger doses may be given than are usually stated. The salts of sodium are to be preferred to those of potassium. Care is necessary in giving opium, with the exception of paregoric, one drop of which for each year is a safe dose. Dover's powder should not be given to children. Chloral is a good sleep producer. The bromides are very slowly eliminated. Sulphonal and trional are safe hypnotics for children. Belladonna is exceptionally well tolerated in children, and may be given in two-drop doses for each year, and even sixty drops a day have been given to a child two or three years old. Alcohol is one of the best heart stimulants and seldom disagrees with children. Strophantus is to be preferred to digitalis. Caffeine and cocaine are not well borne, but strychnine is. Children stand the preparations of mercury and arsenic well. Cold is a good antipyretic, but phenacetin and acetanilid may be used, and also quinine in malaria.—*Medical Standard. Med. Record.*

Infant Mortality.—Of the deaths of infants that take place during the first year, 25 per cent. occur in the first three months. Many of the causes of this waste of life are beyond medical aid. Seasons and climates, race, city, or country, soil

and dwelling, precocious marriages, financial circumstances, the prices of food and dress goods, the prevalence of endemics and epidemics, of alcoholism and syphilis, the ignorance of the people and of medical men, are amongst the most influential causes of excessive infant mortality. Many of them could be prevented by social improvements, which have to go beyond the puny efforts of floating hospitals and fresh air piers. Still even they prove that the public conscience and the sense of mutual responsibility are awakening, and it is to be hoped that our people will rise to the recognition of its own perishing reconcentrados, young and old. The English infant life protection act of 1872 and the French *loi protective des enfants* of 1874 are amongst the first instalments of the public debt paid to infant life. Foundling hospitals and asylums and special hospitals have partially missed their aims, for no other reason than because the laws of infant life, health and mortality were, and still are, but imperfectly understood. It was mainly the frontier territory of the pathology of the very young that was a terra incognita. Our ignorance was the cause of indolence. It became an axiom that nothing could be done with and for small infants. It has taken a long time for us to be taught that no class of our population and of our patients is more endangered by waiting idleness—we prefer to call it expectancy—than the very young; and I fear it will still take a long time before the physician who is thoroughly conversant with the physiology and pathology of infancy will be officially recognized as a peer among the teachers of medicine, and pedology as one of the most desirable facts of medical science and art.—A. JACOBI, *Phila. Med. Journal*.

Impacted Cerumen —Peroxide of hydrogen acts rapidly in disintegrating the solid cerumen; in a few minutes after its use the wax can readily be removed from the ear by syringing.—W. D. TURNER, *Med. Record*.

ABSTRACTS

CONTRIBUTION TO THE CLINICAL ASPECT OF SCARLATINAL NEPHRITIS.

BRUNO SELLNER (*Centralbl. f. Kinderheilk.* 1898, *iii.*, 226.) The form of nephritis most frequently met with in childhood is that of scarlatina. The toxine produced by scarlet fever in the body of the patient, is, in part, eliminated by the kidneys, and seems to exert a specific irritation on those organs. The time in which nephritis, during the course of scarlet fever, usually makes its appearance, is the period between the twelfth and twenty-second day. Occasionally it is only discovered during the fourth week, more rarely during the fifth week; in exceptional cases it even manifests itself shortly before the end of the sixth week.

As regards the frequency with which this complication accompanies scarlet fever, the percentage is very variable, and depends greatly on the character of the epidemic.

No reliance can be placed on the assertions usually made that the nephritis was caused by cold, unsuitable food, insufficient rest in bed, and other external factors for we frequently meet with cases of the most severe uremic forms, where a milk diet has been adhered to, and where the patient was kept in bed longer than one month. The character of the epidemic only is answerable for the more or less frequent appearance of this complication.

Th. Hase (*Jahrbuch xxx.*) who was able to study 2,453 cases of scarlet fever, met with 253 cases of nephritis among these, that is 14.7 per cent. Thirteen per cent. of these presented uremic symptoms. The mortality was 1.9 per cent. Another author, Thomas, on the other hand, states that out of 180 cases of scarlatina seen by him, 60 per cent. were attacked by nephritis. Ch. West mentions 4 per cent.; C. Seitz records 185 cases, 23 per cent. of nephritis. Among 800 cases of scarlet fever, with a mortality of 16.8 per cent. Sellner himself found an average of 14 per cent. of all cases of scarlatina attacked by nephritis. The mortality was between 1 and 2 per cent. Henschel is right when he maintains that even the gravest symptoms of uremia do not justify an unfavorable prognosis. Sellner has seen cases which lay in convulsions for days together, presenting total amaurosis and paralytic symptoms, recover in a short time. An unfavorable prognosis must be given in those cases in which extensive edema exists, which is not affected by the various diuretic measures employed. The situation becomes desperate when a pneumonia is added to a scarlatinal nephritis, for, under these circumstances, we may very soon expect a third factor, namely empyema.

Nephritis, of scarlet fever nearly always ends in perfect recovery; it is rare to have it pass into a chronic form. Another sequel of this form of nephritis is occasionally a polyuria, which may either continue uninter-

ruptedly for months, or appear in a more cyclical form. The septic variety of nephritis scarlatinosa deviates from the usual course. It may make its appearance between the first or fourth week, but it is characteristic of this form of the disease to come on very soon after the appearance of the exanthem, and to set in with very high fever two factors which, as a rule, are not present in the usual form of scarlatinal nephritis. In accordance with its septic character, this form runs an extremely rapid course, and always ends in death. Death takes place usually on the third to the tenth day.

The latest period in which we may yet suspect the appearance of a nephritis is the sixth week of the disease. These delayed nephritic forms make their appearance, as Sellner has frequently observed, in the wake of some very peculiar prodromal symptoms. The child is seized, for example, at the beginning of the sixth, or the end of the fifth week, with an angina follicularis. Moderate fever makes its appearance, and after two or three days the punctate deposit in the throat disappears, but no blood and albumin is found in the urine. In another patient the scene is ushered in with a swelling of the submaxillary, or cervical lymphatic glands, accompanied by fever, which is then followed by a nephritis, after the lapse of two or three days. In a case of this kind, the blood was examined bacteriologically, but the result was negative. This delayed form of nephritis is entitled to a favorable prognosis.

The condition of the urine in nephritis scarlatinosa, is, on the whole, the same that we meet with in all other inflammations of the kidneys. It should, however, be noted, that in the scarlatinal form of nephritis there are more frequently absent casts in the urine, at the same time much blood and albumin is also present. It is strange that we are often unable to obtain the reaction for albumin, although the urine is distinctly the color of beef tea. On the following day the reverse is often true. The percentage of albumin is very variable. It oscillates between five-tenths per cent. and 12 per cent.

The occurrence of a nephritis in scarlatina indicates a strict milk diet. Soda water and mineral waters may be allowed for thirst. Wine, tea and cognac should be only ordered when the heart begins to weaken. Should the disease continue for a longer time, eggs and roasted meats are recommended to strengthen the patient. The medicinal treatment consists in administering tannate of quinine three times a day, in doses of 0.25 grains, when only a slight edema, or none at all, is present. Where edema is prominent, the child should have a warm bath, 33° R., from one to three times daily, according to the condition. In extensive edema, an injection of pilocarpine, 0.01 grain, is to be administered previous to the warm bath. Internally an infusion of digitalis, 0.15 to 0.25: 70.0: 100.0 grains, or tincture of strophanthus, xx—xxx qtt.: 70.0 of distilled water may be ordered as a diuretic. Should the urine be strongly tinted with blood, the hot bath must be discarded, and plumb acet pulv. 0.05 grains may be given three times daily. The internal administration of liq. ferri sesquichlorat, extr. secal. cornut and tannigen did not yield any special results, according to Sellner.

SIGMATISMUS NASALIS.

ALB. LIEBMANN (*Zeitschr. f. pract. Aerzte*, 1898, vii., 419). Sigmatis-mus nasalis belongs to the large group of speech disturbances which are known by the name of stuttering. Stammering should not be con-founded with stuttering. The stuttering individual has a normal speech, on the whole. Only here and there, especially when beginning a word, is his speech interrupted by inco-ordinate movements of the respiratory, vocal, and articulation muscles. The stammering individual, on the other hand, is altogether unable to pronounce certain sounds or their combina-tions, or he makes certain sounds in an ugly manner. Thus, one who stutters, says, "k—appe" (a long pause after k) or, "Kkkkappe"; one who stammers, on the other hand, pronounces kappe, ' tappe,"or "pappe."

Mutilations of sound, as a rule, only occur in S-sounds. This is denominated sigmatismus, and is divided into three classes:

1.—*Sigmatismus simplex* (simple lisping). This disturbance of speech consists in passing the tip of the tongue between the teeth in pro-nouncing the sharp ss and the soft s, instead of allowing the tip of the tongue to rest on the lower row of teeth while both rows are in contact. While sigmatismus simplex is only an esthetic error, this becomes much worse in both of the following disturbances of speech.

2.—*Parasigmatismus lateralis* (lateral lisping), is produced by the passage of the air in enunciating the s-sounds (ss, s, French ge, anterior ch—for example, in the word "ich" and J) not anteriorly over the lower incisors but by letting it escape with a hiss ng sound laterally, accom-ppanied by an ugly noise over the right or left pre-nolars. As a rule, this ugly lateral hissing sound is produced with all the s-sounds; occasionally a few sounds are normal and the disturbance is confined only to ss and s. When all s sounds are lisped laterally, speech does not only sound ex-tremely ugly, but its distinctness is also impaired, as no difference can be heard in the individual s sounds.

3.—*Sigmatismus or parasigmatismus nasalis* is an extraordinary marked speech defect. Here, the s sounds are replaced by a peculiar snoring nasal sound, while the other sounds have their normal tones. This latter speech defect does not seem to occur very frequently. It is a peculiar phenomenon, as the nasal lisp only occurs with the s sounds, all other sounds being correctly formed with the oral current. That form of speech defect in which the air, passing through the nose in speech, par-ticipates abnormally, is designated as nasal lisp. Two forms of the same may be distinguished—rhinolalia clausa and aperta. In rhinolalia clausa the nasal air is less concerned in speech than would be the case in normal vocalization. This form of speech disturbance is brought about by tumors of the nose or of the naso-pharynx, which obstruct the passage of air through the nose.

In rhinolalia clausa, therefore, only the three nasal sounds—m, n, ng—are affected; m sounds like b, n like d, ng like g. All the other sounds are normal. The vocal sounds only take on a peculiar dull tone, but can be plainly distinguished.

In rhinolalia aperta the conditions are, however, reversed. Here a

permanent communication is present between the oral and nasal air as a result of defects of the palate, paralysis of the soft palate, or an obstruction of the velum palati, and from naso-pharyngeal tumors, which render impossible a closure of the oral cavity from the nasal cavity. In rhinolalia aperta the three nasal sounds only can be produced. All other sounds are, of necessity, essentially curtailed in their purity as a result of the defective nasal closure. The vocal sounds are accompanied by a nasal tone, and can only be partly differentiated; u sounds like ü, e like ä, etc. The occlusion sounds—p, b, t, d, k, g—have a nasal sound; ba sounds like mba, da like nda, ga like nga, etc. The absent explosive sound is usually replaced by a sound resembling a cough, which is produced in the larynx by a closure of the vocal cords (designated by Gutzmann as "kehlkopfdruck"). The friction sounds are usually still less distinct; f and w are, as a rule, hardly sounded; l sounds like n; ss, s, sch (ge), ch, and j, are replaced by a snoring nasal sound.

Sigmatismus nasalis is also a form of rhinolalia aperta, being produced by an abnormal communication of the oral and nasal cavities. This vocal disturbance is made interesting by the fact that the velum palati performs its functions normally in all other sounds, and cuts off the oral cavity from the nose, but it does not do so when the s sounds are attempted. From this we may conclude that we are not dealing with any organic disturbance in sigmatismus nasalis; for it cannot be conceived why the velum palati should not be able to raise itself only in the s sounds. We have to deal, rather, with a purely functional disturbance, which can not be relieved by an operation, but only by a course of speech exercise. In practice, mistakes are being made in this respect. An attempt is still made to cure sigmatismus nasalis by local treatment of the nose or the naso-pharynx. Notwithstanding this, a simple theoretical consideration will assure us that tumors of the nose are, in general, unable to exert any influence on the formation of the s sounds, and that tumors of the naso-pharynx either produce a rhinolalia clausa, which does not affect the s sounds, or else a rhinolalia aperta, in which case all sounds become nasal. Where, however, all other sounds have a normal tone, and only the s sounds are nasal, we may conclude that a closure of the nasal cavity from the oral cavity possibly exists, and that the defect is not due to organic changes.

The author then cites two cases representing two types of sigmatismus nasalis, which had not been reported, and offers the following comments:

In the first place, it is interesting that in both cases only ss and s were pronounced with a nasal tone, while sch was normally formed by the oral currents. In the other eight cases which have been observed, ss, s, and sch, were, in five cases, affected by the speech disturbance. A locksmith 20 years of age, who was a patient of Liebmann's, only pronounced sch through the nose, being able to render the true s sounds perfectly normal. A patient, 5 years of age, only pronounced the sharp ss sound, and the first ch (for example, in "ich") through the nose; the soft s and sch he was perfectly well able to pronounce properly. A very curious case of sigmatismus nasalis was that of a 7-year-old boy. This patient was able

to pronounce all sounds normally without any nasal twang, even the s sounds. Only sch in conjunction with p, t, w, was pronounced through the nose (for example, the words spät, stehe, schweige). Before, after, or between vocals the sch was pronounced normal through the mouth (for example, the words, schabe, tisch, asche.)

This irregular participation of the s sounds in the disturbance also points to the fact that we are only dealing with a purely functional defect in sigmatismus nasalis.

In the 9-year-old boy, mentioned above, the laryngeal mirror becomes clouded from all sounds, where these are nasal, the cloud is heavy, in all other sounds it is lighter. In the young lady, however, we can demonstrate a nasal current with the laryngeal mirror only when both s sounds are pronounced (excepting, of course, the three nasal sounds). This deportment of both patients is typical, and points to a different etiology in each case. The boy formerly pronounced all sounds through the nose. He was afflicted with adenoid vegetations, which obviously disturbed the motility of the velum palati and caused a rhinolalia aperta in the pronunciation of all sounds. As the years went by the adenoids did not keep pace with the growth of the naso-pharyngeal space. The motility of the velum palati gradually became more free, and the boy was able to enunciate all other sounds normal to the ear. Only the two difficult s sounds would not yield to his endeavor, and he continued to pronounce them with a strong nasal current, notwithstanding that the velum palati was now enabled to close the nasal cavity sufficiently, and also acted very well in the pronunciation of other sounds. The removal, a few weeks ago, of the adenoid growths, therefore, did not make any change in the disturbance, as the motility of the velum palati had not for some time been disturbed by the adenoids.

The true cause of the sigmatismus nasalis, at the time when Liebmann examined him, was really the inability of organs of speech, to articulate the difficult s sounds without artificial aid. The proof that this was the case is furnished by the result of treatment, which at once put the boy in the position to pronounce the s sounds normally.

In the second case, that of the young lady, a general nasal enunciation was not at any time present; the s sounds only were always nasal, as it was demonstrated in the beginning with the laryngeal mirror, that a nasal current was only present when the two s sounds were pronounced. Here, therefore, the sigmatismus nasalis, could not be referred in the beginning to any organic cause, but rather to the inability of her organs of speech to handle the two difficult s sounds. As she pressed the tip of the tongue too firmly against the teeth in pronouncing these sounds, the air current could not escape in front at the incisors, and therefore found its way through the nose.

The hypertrophies of the nasal mucous membrane never, of course, exerted any influence on this speech disturbance. Liebmann, however, does believe that the prognathous upper jaw-bone should be looked upon as a predisposing cause of sigmatismus simplex. Where a strongly overlapping upper jaw-bone is present, the lower jaw is obliged to make a greater execution to bring the lower incisors to the proper s position. If this movement is not properly carried out, so that the lower row of teeth

remains behind the upper, the tip of the tongue, as in the case of the lady patient, is easily placed too closely to the teeth, and the air is hindered from escaping in front. The air then escapes either at the side over the premolars (*parasigmatismus lateralis*), or it enters the nasal cavity (*sigmatismus nasalis*). At all events, the prognatheous upper jaw in our patient was only a predisposition for the occurrence of the *sigmatismus* (for we know that a great many people, in spite of this conformation of the jaw, are able to talk normally), and the patient was very soon enabled, with a little help, to enunciate normal s-sounds. The real cause lay in the inflexibility of the organs of speech.

Liebmann has seen a partial nasal enunciation in the s-sounds, only in the letter l. The case was that of two educated Russian gentlemen, who both pronounced l as ng. For example, in place of *alle*, "*ange*." These gentlemen had also had their noses "*cauterized*" for this speech defect; without any benefit, however. The speech disturbance at once disappeared when the tongue was at first artificially placed in the l-position. In a very short time these two patients learned to speak perfectly normal.

Finally, Liebmann would like to draw attention to the fact that we are by no means dealing with a purely æsthetic error in *sigmatismus nasalis*, as also in a great many other forms of stammering. Speech is rather very much curtailed in its distinctness when the disturbance covers all s-sounds, for the reason that in this case only one single sound, namely, a nasal snoring, takes the place of all s-sounds. However, even where only some s-sounds are pronounced through the nose the speech is so disagreeable that the patient is everywhere conspicuous, and, as in the case of the 9 year old boy, must suffer exceedingly from the criticisms of their companions. Whoever has the opportunity to study the life of such patients, will be astonished to see how much they suffer from this seemingly slight defect of speech. In persons whose vocation demands a distinct and pure speech, as in the case of a teacher, it becomes a question of existence, whether or not we are able to cure the patient.

GUN-SHOT WOUND OF THE ABDOMEN—OPERATION— RECOVERY.*

Dr. AP. MORGAN VANCE, of Louisville, Ky., reports the following case:

A boy, 13 years of age, while sitting on the edge of a lounge, playing with a Flobert rifle, raised it to look through the muzzle; as he did so, the weapon was accidentally discharged, and the ball entered his body to the left of the median line, half way between the ensiform cartilage and the umbilicus. He walked across the room, put the gun in the corner, then laid down on the bed. A moment later his mother entered the room, and he told her he was shot.

A physician was summoned at once, but a surgeon was not consulted

* Abstracted from proceedings of the Louisville Medico-Chirurgical Society.

for six hours. At this time the author arrived, and found the boy in profound shock; feet and hands cold; pulse 120 to 130; lips blue. It was about as forlorn and desperate a case as he had ever seen.

It was thought the boy would die in a short time, but the mother was told that the best thing was to give him the chance of an operation. She consented, and, almost immediately, as soon as instruments could be sterilized, etc., he was put upon the kitchen table and the abdomen opened between the ensiform cartilage and the umbilicus.

The stomach presented at the incision, the bullet having bitten out a piece half an inch in length.

Six wounds, three of entrance and three of exit, were found in the ileum three-feet above the cecum. There were also two large, lacerated wounds in the mesentery near its border, one of which was bleeding profusely. The abdomen was filled with fluid blood, which came up through the first wound in the peritoneum. All these wounds were sutured, and the abdomen irrigated by means of a pitcher and water.

The author thought that the patient would promptly succumb, and closed the abdomen as rapidly as possible. However, he made a comparatively good recovery.

When the sutures were removed on the seventh day after the operation, there was no suppuration about the wound. That night the boy scratched the wound vigorously, and there subsequently developed a mural abscess, with quite an accumulation of pus, without odor, at the longer angle of the wound. Drainage is good, the boy's temperature remains about normal, and no further exploration has been made. It is believed that he will make a good recovery.

There were three other wounds, the like of which the author had never seen. They were where the small bullet had grazed or passed through the great omentum, making hematomæ, which looked like large cherries with the skins taken off. He did not interfere with these.

The case should encourage surgeons to make an effort to save life under such circumstances, even when the outlook is most forlorn. It was one of the most desperate cases that the author had ever operated upon, and it is rather a curious coincidence that he should have had two cases nearly alike within a week or two of each other, both gunshot wounds of the abdomen in which the stomach and intestines were seriously injured, both patients recovering after operation.

In the discussion which followed Dr. Vance's report, Dr. T. S. Bullock said that his experience had been unfortunate in operating upon such cases, that he had operated upon two, both of which died very promptly. He believes that with improved technique this kind of injury will show an increased percentage of recoveries.

THE TREATMENT OF CHRONIC COLITIS IN CHILDREN.

La Presse Medicale (abstracted in the *Therapeutic Gazette*) in a recent issue contains a paper by Romme upon this topic. After pointing out that the therapeutic indication in most of these cases is multiple, he also points out that hydrotherapy in the form of frequent and prolonged

baths, sometimes hot and sometimes cold, according to the reaction of the child, is useful; that it is absolutely essential to regulate the diet; and that in many cases the administration of broths, vegetable or animal, is extremely useful in place of milk. Where it is evident that there is deficient gastric digestion, care must be taken that all meats are carefully pulped or minutely subdivided before they are swallowed. Well-toasted bread should be used, and the following formula may be prescribed:

R Hydrochloric acid, 5 drops;
Distilled water, 3 ounces;
Gum arabic syrup, 6 drachms;
Tincture of opium, 2 drops.

SIG.—One or two teaspoonfuls twice a day.

Should there be evidently much inflammation of the large intestine, hot baths every two or three days, with hot compresses applied night and morning over the abdomen, are very useful; and lavage of the intestine with hot water which has been boiled, and to which has been added borax in the proportion of 2:1000, or the decoction of chamomile, exercises a useful influence upon the mucous membrane. The compresses and the baths relieve pain. Sometimes minute flying blisters applied to the abdomen are of value. Where it is evident that putrefaction is going on in the intestine and the colitis is chronic so that the stools are very evil in odor, it is well first to give minute doses of calomel in the following prescription until the mucus is thoroughly removed from the bowel:

R Benzo-naphthol,
Beta-naphthol, of each 2 grains;
Salicylate of bismuth, 1 grain;
Powdered sugar or powdered gum arabic, 5 grains.

SIG.—Make into one powder and give three of these powders to a child of 4 years.

This treatment should be continued for four or five days. Should the pain be very severe, minute doses of opium may be given. Antipyrin is not satisfactory, as it does not thoroughly relieve the pain, and is apt to diminish the secretion of urine, but should the fever be marked and it be impossible to relieve it by cold, then antipyrin may be used. Should evidences of collapse come on in the treatment of enterocolitis of children, copious intestinal irrigation with normal salt solution is to be resorted to to wash out the putrid material and to supply the body with liquid. In some instances the large bowel will be soothed by the injection of considerable quantities of olive oil, the soft rubber tube being pushed high in the bowel and three or four ounces of oil given.

UNGUENTUM CREDE—SOLUBLE SILVER.

G. SCHIRMER (*Journal of the American Medical Association*) has treated nine cases of cerebrospinal meningitis with inunctions of 30 gm. unguentum Crede in the course of three days, repeating an inunction of 10 gm. at each remission. Combined with this, very hot water compresses

were applied to the spine; the nasal cavities were antiseptically cleansed as soon as the patient's condition permitted, and small doses of trional were given, if very restless. All were children, and recovered rapidly, with none of the after-effects so frequently observed with this disease. Edwin Klebs suggests that infection may be carried through the tissues, as well as along the lymph and blood system (*N. Y. Med. Monats.*, November), by the leucocytes, which would explain the success of the inunction, and urges tests to demonstrate this, with Credé's soluble silver, as peculiarly applicable for the purpose. O. Werler considers that Credé has succeeded "with his systematically conducted chemico studies and bacteriologic experimentation in filling a gap in therapeutics that has been long and painfully felt by all practitioners with the discovery of a specific which, without the slightest injury to the vital functions, removes the cause and cures the dreaded septicemic processes by its intense bactericidal power. In this respect Credé's *argentum colloidal* is absolutely without a rival. In this soluble metallic silver we have an internal therapeutic measure that can be relied upon to successfully control the blood-poisoning due to septic infective substances, if the diagnosis is made in time, and there are no serious secondary affections." He finds also that the most effective method to apply it is in inunctions, by which means the medicament reaches the blood by percutaneous absorption, where it ensures a universal antiseptics and disinfection of the entire organism, by the formation of powerfully bactericidal silver salts. He only has three cases to report (*Deutsche Med. Woch.*, No. 40): acute sepsis, a septic affection and chronic multiple furunculosis. The progress of the affection was arrested with inunction, and complete recovery followed promptly in every case.



PEDIATRICS

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No. 5

ORIGINAL ARTICLES

A GROUP OF UNUSUAL CASES.*

(Continued.)

CASE 1.—Secondary Pulmonary Hypertrophic Osteo-Arthropathy Complicating Pott's Disease in a Child.

CASE 2.—Cyst of the Femur Complicating Bilateral Coxa Vara, in a Child.

CASE 3.—Pott's Disease of the Thoracic Region, in which an Abscess was the Direct Cause of Death.

By ROYAL WHITMAN, M.D.,
New York.

CASE II.

ON March 5, 1895, the patient, a boy 11 years of age, was brought to the Hospital for Ruptured and Crippled. The family history was not remarkable. He was nursed by his mother, and appeared to be a healthy and normal child until the age of 3 years, when it was noticed that he waddled in walking. There was at that time no complaint of pain or weakness; it is evident, however, that the symptoms gradually became more marked, for when he was 6 years of age he was treated for eighteen months, for supposed disease of the left hip, a treatment supplemented, during the following year, by the application of a plaster jacket for a de-

* Read at a meeting of the Orthopedic Section of the New York Academy of Medicine, January 20, 1899.



FIGURE I.

Illustrating the Abnormal Breadth at the Pelvis Caused by the Coxa Vara and the Outward Bowing of the Femora. August, 1898.

formity of the spine. For several months, possibly a year, before his visit to the hospital the child had complained of pain and discomfort about the left groin and thigh.

He presented the usual signs of double Coxa Vara, of the type in which the depression of the femoral necks is almost directly downward, rather than the usual form backward and downward, thus the waddling gait and abnormal lordosis but not the outward rotation of the feet, characteristic of the latter form. Both trochanters were elevated about an inch above Nélaton's line, but the left leg was three-quarters of an inch longer than its fellow; (Right $27\frac{3}{4}$, Left $28\frac{1}{2}$) flexion at the hips was slightly limited, and the range of abduction of the thighs was not more than a quarter of the normal. The patient presented well marked evidence of former rhachitis, in the slight outward bowing of the femora and the anterior curvature of the tibiae. He was in good physical condition and well developed.

Three and a half years later, in August, 1898, the boy, then 14 years of age, again appeared at the hospital. During the interval he had suffered from increasing discomfort about the left hip and thigh, and at times, even severe pain after over exertion. On examination a very decided change in the contour of the left femur was noted. The forward and outward bowing had increased; there was slight irregularity in the shape of the shaft at the upper extremity, supposed to be the effect of former rhachitis; there was no local sensitiveness to pressure. The range of abduction was lost, voluntary separation of the knees being but seven inches. The left leg was one inch longer than its fellow. (Right $30\frac{1}{4}$, Left $31\frac{1}{4}$). There was also a well marked projection above and at the outer side of the left eye, apparently due to an enlargement of, or within, the frontal bone, which made the eye somewhat more prominent than the other. This enlargement, unattended by discomfort, had apparently not attracted the attention of the family, nor has any particular interest regarding it been shown since its discovery.

The boy was admitted to the hospital for the purpose of correcting the deformity of the neck and shaft of one or both femora by the removal of a wedge-shaped section of the bone from the base of the trochanter. By this procedure the range of abduction would be increased while the enforced rest, and



FIGURE II.

Illustrating the Abnormal Separation of the Thighs, and the Greater Deformity of the Left Femur. August, 1898.

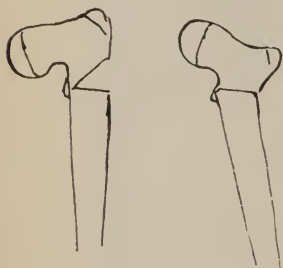


FIGURE III.

Showing the Enlargement at the External Angle of the Orbit. August, 1898.

the changes incidental to repair would, it was thought, influence favorably the nutrition of the weakened part. The operation was undertaken on September 8, 1898.

On removing the periosteum over the upper extremity of the left femur a peculiar dark color and a somewhat reticulated appearance of the bone was noticed, and at the first touch, the chisel broke through the brittle cortex and entered a cavity, from which spurted a quantity of serum, of the color of prune juice. This cavity was of about the size of a hen's egg; its base was shut off from the medullary canal of the diaphysis by a cone-shaped projection, covered apparently with cartilage; its upper extremity reached about half way to the apex of the trochanter. Its walls were lined with a smooth fibrous covering, which bled



FIGS. IV. and V. Illustrate the effect of the Cuneiform Osteotomy in the Treatment of Coxa Vara.



FIG. VI.—The Position of the Cyst.

freely on manipulation. As it was feared that the inner part of the femur had been weakened by the formation of the cystic tumor and as it was evident that union after fracture would be doubtful, the cavity was simply packed with gauze to restrain the hemorrhage. The packing was entirely removed at the end of four weeks, and the boy began to walk about. The sinus closed one month later.

In the light of the facts demonstrated at the operation, the history of the patient and the physical signs may be interpreted somewhat as follows: Originally he suffered from infantile rhachitis, and as a result, double Coxa Vara and the less important deformities of the lower extremities. The mechanical effects of the Coxa Vara were, as is not unusual, mistaken for disease of the hip and spine. The later symptoms, which

had first attracted attention at the age of 10 years, were not due to Coxa Vara, although it may be assumed that this had progressed somewhat, but to the tension of the cystic tumor within the femur, which was slowly enlarging, causing weakening and outward bowing of the shaft. This accounted also for the lengthening which had been inexplicable. The weakening was so marked that spontaneous fracture, as in other cases reported, could not have been long delayed.

The patient will be kept under observation, and if the symptoms recur, a second operation, for the complete removal of the wall of the cyst, will be indicated.

Simple cysts of this character in this situation are extremely rare; including the ancient cases of Nélaton and Foreip, ten are recorded. Schlange has reported three cases, Korte two, Miessner, Kohr and Fritz Koenig one each.

The cyst is usually situated at the extremity of the diaphysis, most often at the upper extremity. The symptoms usually begin in childhood or adolescence, the cyst slowly increases in size expanding and weakening the bone, which becomes deformed or breaks. A primary diagnosis before operation has never been made. The cyst may be simple, but more often it is made up of a number of communicating spaces; it usually contains brownish serous fluid; its walls are composed of fibrous and cartilaginous tissue. Virchow's explanation of the causation is, that they are the result of softening or transformation of an originally more solid growth of a cartilaginous or fibro-cartilaginous nature, the probable origin being a displaced fragment of epiphyseal cartilage. Such a primary cyst in the bone of a rachitic child has been demonstrated by Zeroni. This theory, which is generally accepted, accounts for the position of the cyst at one or other extremity of the diaphysis.

Hydatid cysts of the femur may cause similar symptoms. These are also rare in this situation, and in this case neither the character of the contents of the cyst nor its microscopic examination favored this diagnosis.

The orbital tumor is probably of the same character, situated within the cavity of the frontal bone, evidently displacing the eye by expansion from above. It is stated that the swelling is more noticeable when the child has a cold; this

would indicate a communication with the nasal cavity. Exploration has been refused.

- Nélaton—*Elements de Path. Chir.* II., p. 48.
 R. Foreip—*Chir. Kupfertafeln*, 438
 H. Schlange—*Festsch. f. Esmarch*, 1893.
 Korte—*Deutsche Zeit. f. Chir.*, 1880, B'd 13.
 Miessner—*Zur Path. der Knochencysten*. Erlangen, 1884.
 Virchow—*Monatsbericht d. K. Akad. der Wissenschaft*, Berlin, 1876.
 Fritz Koenig—*Archiv. f. Chir.* 1898, B. 56-657.
 Kohr—*Deutsche Zeits. f. Chir.*, 1896, B. 43., p. 156.
 Zeroni—*Arbeit aus dem Path. Inst. in Göttingen*, 1893, s., 176.

CASE III.

The patient, a boy 4 years of age, was brought to the Vanderbilt Clinic on November 12, 1898.

An aunt had died of tuberculosis of the lungs, and a sister was under treatment at the Clinic for hip disease, otherwise the history was not of interest. The previous Spring the child had complained of "pain in the stomach," increased by jars, but the symptoms had subsided, and it was supposed that he was perfectly well until two weeks before the visit to the Clinic, when, after a fall, he had begun to complain again of pain; and a grunting, embarrassed respiration, aggravated on exertion, had attracted attention.

The child was in good condition; there was a well-marked angular projection at the fourth dorsal vertebra, and the usual symptomatic attitude, and the attendant symptoms of tuberculous disease were present. Beside the embarrassed or grunting respiration, characteristic of active disease of this region, a peculiar asthmatic obstruction to respiration was noticed on several occasions.

The mother stated that the child often suffered from similar attacks at night, and that he preferred to lie on his face "braced against his pillow." After the death of the patient we learned from the father that these asthmatic attacks were much more severe than the history, as obtained from the mother, had represented; that they were sometimes prolonged until the child grew black in the face and until death seemed imminent.

Although there were no positive signs either on auscultation or percussion, yet the character of the dyspnoea seemed to warrant a diagnosis of abscess pressing upon the trachea. On this account he was admitted to the Hospital for Ruptured and Crippled, on December 18, the more direct symptoms of Pott's disease having been relieved meanwhile by the application of a plaster jacket and jury mast.

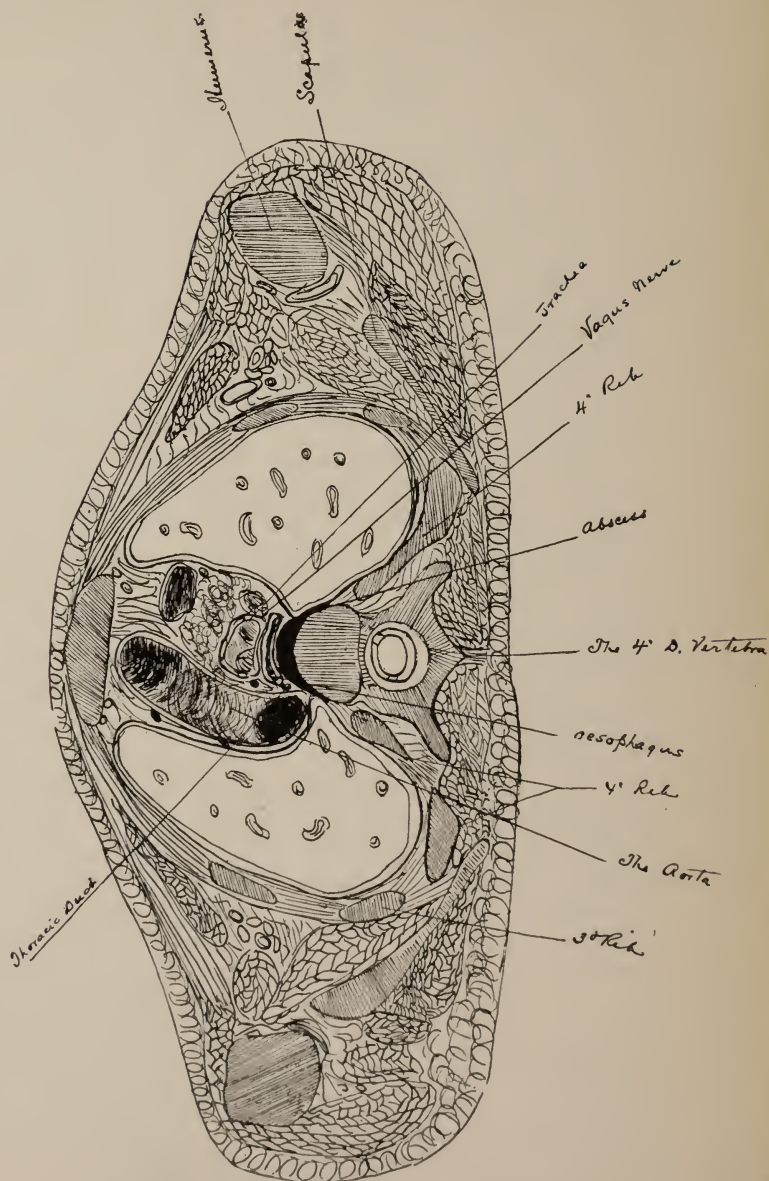
The child was then in good condition, apparently happy and comfortable, although on exertion the asthmatic breathing became noticeable. The quality of the voice was unchanged. No suffocative attacks were noted on the night records, although he was observed on one occasion, at least, to be sleeping on his hands and knees.

On the morning of December 21st the jacket was removed for the purpose of examining the chest more carefully, but the symptoms of dyspnoea, caused apparently, in part by the removal of the support, and in part by the recumbent position, became so marked, that it was immediately reapplied without further examination. The boy died suddenly that evening.

At the autopsy the internal organs showed no sign of disease. On removing the lungs and heart, a tense, fluctuating tumor was apparent. It was the size of a large hen's egg, its base upward on a line with the upper border of the third dorsal vertebra, its apex at the sixth dorsal, in the median line of the spine directly behind the oesophagus.

The abscess, containing about two ounces of puriform fluid, occupied the space between the oesophagus and the anterior longitudinal ligament. On the lateral aspect of its base, opposite the fourth vertebra, was a small opening which communicated with an eroded area on the underlying bone. Here the fluid very slightly distended the covering of the third and the lateral tissues by the side of the fifth vertebra. When the soft parts were removed, it was seen that the body of the fifth vertebra had almost completely disappeared, so that the adjoining bodies above and below were in contact, forming a sharp angle. There was a superficial erosion on the right lateral aspect of the body of the fourth, and a very slight defect at a similar point on the third vertebra.

It appeared that the abscess, originally confined by the longitudinal ligament in the neighborhood of the disease, had found an opening into the retro-oesophageal space, at a time



Cross section of the body to show the position and the relations of the abscess
(after Dwight).

probably corresponding to the greater obstruction of breathing, or about six weeks before death.

The greatest projection of the tumor was opposite the third vertebra and as the abscess sac was forced forward by the spine above the collapsed vertebral body, it pressed upon the trachea in the neighborhood of its bifurcation. It was thus explained why the supine posture increased the difficulty in respiration, for when the neck was inclined backward the trachea was more directly compressed by the projecting tumor.

The case presents several points of interest.

Abscess, although the most serious complication of Pott's disease, is rarely a direct cause of death, unless it obstructs the respiratory passages. Such obstruction is not particularly uncommon in disease of the upper cervical region, but here its cause is apparent, and the abscess can be easily reached and evacuated. When the obstruction is within the chest wall, however, the diagnosis is by no means as easily made nor is treatment as clearly indicated.

The diagnostic symptom of such obstruction appears to be inspiratory dyspnoea, aggravated at times, it may be, to suffocative attacks.

One is so accustomed to the embarrassed respiration, symptomatic of the disease of the spine in this region, due to muscular spasm and to mechanical interference with the movements of the chest, that the significance of what may be called asthmatic breathing, as distinct from grunting respiration, might be easily overlooked. Even if a diagnosis were made, as in this case, it would be a question when the symptoms warranted operative intervention.

If, as in a case reported by Bradford (Trans. Am. Orth. Ass'n, Vol. IX., p. 40), the abscess had reached a considerable size, and if, as is usual, it had found its way back to the vicinity of the chest wall where it might be demonstrated by percussion, it would seem that the simple operation of costo-transversectomy would be indicated. But in this case there was no dullness on percussion, and the small abscess lay at a distance of three inches from the exterior of the body, so that it is probable that the larger opening of so-called posterior thoracotomy would have been necessary, in order to reach the sac, surrounded as it was by important structures.

This is a perfectly justifiable operation, but until the danger of abscess in this situation, and the symptoms that indicate it, have been clearly established by reports of cases similar to this, it will hardly be adopted in cases in which the presence of fluid cannot be demonstrated by more positive signs than obstructed respiration.

The third point for consideration is the question of the possible effect of forcible correction in this case. At the autopsy the deformity was easily reduced by slight force, leaving the space formerly occupied by the body of the fifth vertebra.

It was a case, to all appearances, particularly suitable for correction, as the deformity was of short duration and in a favorable region.

It might have relieved the pressure, which was increased by the forward inclination of the spine; it certainly could hardly have hastened death, yet if death had followed at the same time and in the same manner after such a procedure, it would undoubtedly have been recorded as a direct result of the operation.

The same comment may be made on the operation for the evacuation of the fluid. Had death followed directly or remotely, it would have seemed to illustrate the disadvantages of positive treatment as compared with conservatism.



GENERAL FORMULÆ FOR MODIFICATION OF MILK.

By FIELDING LEWIS TAYLOR, M.A., M.D.,
New York.

THE following formulæ were suggested by those published by Dr. W. L. Baner in the *New York Medical Journal* for March 12, 1898, and the article by Dr. Westcott in *ves of Pediatrics* for January, 1898.

Problem.—It is desired to make a mixture of water, cream and milk with the addition of sufficient milk sugar, such that it shall contain known percentages of fat, proteid and sugar. How much of each is required to make a given quantity, Q?

Desired percentage of fat = F.

Desired percentage of proteid = P.

Desired percentage of sugar = S.

Quantity of milk sugar to be added = X.

M, represents milk; C, cream, and W, water.

a, a' stand for known percentage of fat in cream and milk, respectively.

b, b' stand for known percentage of proteid in cream and milk, respectively.

c, c' stands for known percentage of sugar in cream and milk, respectively.

$$Q \times P = b' M + b C$$

$$Q \times F = a C + a' M$$

$$\frac{S \times Q}{100} = \frac{c' M}{100} + \frac{c C}{100} + X$$

hence

$$(1.) M = \frac{1}{b'} (Q P - b C)$$

$$(2.) C = \frac{Q (b' F - a' P)}{a b' - a' b}$$

$$(3.) X = \frac{S \times Q - (c' M + c C)}{100}$$

$$(4.) W = Q - (C + M)$$

Example.—If whole milk contains 4 per cent. of fat, 4.30

per cent. sugar and 4 per cent. proteid, 12 per cent. centrifugal cream will contain 3.80 per cent. proteid and 4.20 per cent. sugar, according to Holt.

Now if we should desire 40 oz. of a mixture which shall contain 2 per cent. fat, 5 per cent. sugar and 1.25 per cent. proteid, by substituting $a = 12$, $b = 3.80$, $c = 4.30$, $a' = 4$, $b' = 4$, $c' = 4.20$, $F = 2$, $S = 5$, $P = 1.25$, $Q = 40$, we find:

$$C = \frac{40(4 \times 2 - 4 \times 1.25)}{4 \times 12 - 4 \times 3.80} = \frac{120}{32.8} = 3.6 \text{ oz.}$$

$$M = \frac{1}{4}(40 \times 1.25 - 3.8 \times 3.6) = \frac{36.32}{4} = 9 +$$

$$X = \frac{50 \times 40 - (4.30 \times 9.1 + 4.2 \times 3.6)}{100} = 1.45$$

Compare results from these formulæ with those in Dr. Westcott's article.

If with Baner we take $b = b'$ and $c = c'$

$$(1.) M = \frac{Q \times P}{b} - C$$

$$(2.) C = \frac{Q(F - P)}{a - a'}$$

$$(3.) X = \frac{S \times Q - c(M + C)}{100}, M + C = \frac{Q P}{b}$$

$$X = \frac{B S \times Q - c Q \times P}{100 b}$$

when $b = c$

$$X = \frac{Q(S - P)}{100}$$

173 West 73d Street.

UMBILICAL HERNIA.

By FRANCIS HUBER, M.D.,

New York.

IT is not necessary to present statistics to call attention to the frequency of umbilical hernia in infancy and childhood. The cases are common and of frequent occurrence in general practice. Unfortunately, though the treatment is simple, the cases are too often referred to the instrument maker, and no subsequent supervision follows, unless some other ailment causes the family to seek further advice. A truss is adjusted, and not infrequently a poor pad defeats the object to be attained. For every instrument properly adjusted in the patients presented at the clinic, we find three at least open to some objection. The practice of putting a ball or conical pad over the umbilical ring is a serious error, as it presses into and keeps the opening patent, thereby preventing nature's efforts at cure.

Some of these "so-called trusses" are made with plates of celluloid, with a conical projection in the center, attached to a band of webbing or other material, to encircle the abdomen; others are made of hard rubber, and some consist of a piece of porous rubber, hemispherical in shape, attached to a belly-band, and covered with lint or cotton. A very pretty, but inefficient, sample of the instrument maker's art was shown to me quite recently. It was no surprise to find that the ring had not closed, though the child was 4 years old, and had worn a truss from early infancy.

The soft rubber hemispherical pad had kept the intestines from protruding, and at the same time prevented closure of the umbilical opening.

We ought not to have any bother in adapting a truss, if we remember nature's method of cure. The umbilical aperture, in the course of months or a year, grows small, more slit-like, and finally entirely disappears as the abdominal muscles become more and more developed and stronger, and thereby confine the intestine within the abdomen.

During this period, any cause tending to increase the intra-

abdominal pressure, as crying, straining, coughing, etc., should be treated and removed as quickly as possible.

For years we have employed in the Children's Department of the Vanderbilt Clinic a flat pad (cork, thin board, large button, or coin, etc.) to prevent the protrusion of the intestines into the umbilical sac. The pad (round, oval, or other shape) must be larger than the aperture, and should be covered with sheet lint, gauze, or absorbent cotton, and kept in place by strips of adhesive plaster. To prevent irritation of the sensitive skin, Jacobi advises Dieterich's plaster, which contains 10 to 20 per cent. zinc, and is not open to this objection. Additional support to the abdominal muscles is afforded by the application of the ordinary binder, or belly-band, sufficiently broad to take in the entire abdomen. A knitted or elastic bandage, with a flat pad properly covered, and larger than the aperture, may be employed if the plaster irritates or produces a dermatitis. Such cases ought to be seen at regular intervals by the attendant, to note progress and make the necessary changes in the dressings or other appliance employed.

209 East 17th Street.



COMMENTS UPON INTUBATION.*

BY W. B. PUSEY, M.D.,

Louisville, Kentucky.

I SHALL briefly mention two cases of intubation I have had, in which I removed the tube twice, but was compelled to reinsert it. Intubation in each case was done for relief of laryngeal diphtheria. One child was a boy of 4 years of age, the other a girl, aged 3.

In one case, the first time the tube was removed it had to be put back in 8 minutes, and if I had not had the tube ready and the child in position, I hardly think the tube could have been reintroduced in time to have saved the child's life. The other case was similar, except that the tube did not have to be put back as quickly. The second time the tube was taken out, it remained out in one case 35 minutes, in the other, 20 minutes. In both cases at the first extubation, was there considerable edema of the epiglottis and the arytenoids; but the next time, no swelling or anything unusual could be detected. The tube in each case was of the usual size for the age, and was introduced and extracted without difficulty. I am sure there was little traumatism inflicted in either case. The children have now worn the tube for fifteen days.

I have seen a number of cases of this kind. I remember one, seen a few months ago, in which the tube was removed and again inserted seven times. In one case a child had some obstruction in the larynx and wore a tube for six months. The longest time that I have seen a child wear a tube in diphtheria or croup, is about thirty days.

REMARKS.

Dr. S. G. DABNEY:—I have no doubt Dr. Pusey has read the last paper of O'Dwyer, written just previous to his death, with the rather misleading title of RETAINED INTUBATION TUBES. Three or four years ago I introduced a tube in a very healthy looking child aged $4\frac{1}{2}$ years who had diphtheria of the pharynx and larynx. Another tube had been introduced by

* Reported to the Louisville Ophthalmological and Otological Society.

me, for the same physician on the same day, in a child about the same age. I took both tubes out after five days; one case progressed nicely, and the child rapidly recovered. The other tube had to be replaced in a few hours. It was left in for several days when it was taken out, and this time had to be replaced more quickly. The third time I was summoned in the night to replace the tube, as the child had coughed it out and was in a desperate condition. To make a long story short, that child wore the tube for over two months, and it was only after repeated trials that it could be left out. Every time it was taken out it had to be replaced. Sometimes a suffocative spasm would come on almost immediately upon removal of the tube, and in other instances there would be several hours between the intervals. The child finally got well. And to show the tolerance of children to a tube in the larynx, the mother told me that this child could eat popped corn, while the tube was in the larynx, as well as anybody; the child would go to the table and eat like the other children in the family, and, except for its voice, no one would have known that it was wearing a tube.



EDITORIAL COMMENTS

Drunkenness of Women and the Death of Children.

There has recently been in progress in this city a discussion of the liquor question which has given rise to many and diverse opinions on the part of men and women of every station of life. Bishop Potter, speaking at the Waldorf-Astoria, some few weeks ago, raised the storm by referring to the saloon as a social necessity. However, with the social side of the question we have nothing to do, but we notice that one phase was not touched upon, that is the influence intemperance exerts on infant mortality. Dr. Samuel W. Abbott, Secretary of the Massachusetts Association of Boards of Health, commenting on the matter, says: "The records of every country and every city give ample proof of the assertion that intemperance is a direct cause of infant mortality. The poverty, the neglect, the cruelty, which are the inevitable result of a system of licensed saloons, are all handmaids of intemperance. Cities in which intoxicating liquors are sold freely under local option laws have a higher infant mortality than those in which license is forbidden by the popular vote." The London *Lancet*, speaking on the same subject, so far as Great Britain is concerned, remarks that Dr. Ashby, at a recent conference on public health in Manchester, has directed attention to the rate of mortality amongst the children of the lower classes. In Manchester it is very serious. Dr. Ashby is a physician to a children's hospital with a dispensary department in Manchester. Of 10,000 cases admitted into this institution, 4,000 were those of children under two. Dr. Ashby says that the death rate of children in Norway and in the rural parts of England is at the rate of 100 per 1,000 births, while in Manchester it is at the rate of 203 per 1,000, and in some of the congested districts, where poverty, drunkenness, and vice abound, it

amounts to 300 and even 500 per 1,000—something like one-half the infants born dying before the age of 1 year." In this country drunkenness, and particularly amongst women, is much less than in Europe, but, notwithstanding this fact, there can, unfortunately, be no doubt that intemperance has a very prejudicial effect on infant life. Sanitary improvements, undertaken at the instance of health authorities, while greatly benefiting the health of the public at large, have done little to limit the death rate of infants, and there is a wide field of labor lying before those whose desire it is to raise the condition of the poor.

The Importance of the Early Examination and Treatment of Catarrhal Mouth Breathing in Children. At the meeting of the Medical Society of the State of New York, held on January 31st and February 1st and 2d, Dr. Clarence C. Rice read a paper on the above subject. He said that, according to his experience, in almost 90 per cent. of mouth breathing children the condition was one of permanent nasal obstruction, very largely the result of more or less enlargement of the pharyngeal tonsil. This is probably the opinion of most observers, and there is little doubt that to "adenoid vegetations" are due most of the catarrhal symptoms to which so many children are subject, and which, too, may eventually lead to serious pulmonary trouble. Dr. Rice drew attention to another point, which is well worth noticing, that it required but a very slight degree of hypertrophy of the pharyngeal tonsil to give rise to decided obstruction to nasal respiration. As it is allowed on all hands that this condition is very common, and that at all times it is extremely unpleasant, in addition to which there is always the risk of other diseases being originated, it seems somewhat curious that curative steps are not more promptly taken than is usually the case. The only effective manner of treatment is the radical one, removal of the cause. When the post-nasal space is blocked, nasal sprays have an injurious rather than a

beneficial effect, and it should be remembered that in most instances the operation for the removal of the offending growths is comparatively simple.

**Coddling of Children and the
Infectiousness of Colds**

The crusade now being undertaken against tuberculosis, has clearly brought to the minds of every one that the only intelligent treatment of the disease, is by means of fresh pure air, and a good diet. In all parts of the world, Sanitoriums, conducted on those principles, are springing up, and even in England, where one would think that the climate was hardly suitable for the out-of-door treatment, the system is to be carried out on a large scale. But, after all, it should be remembered if proper care is taken of children when young, and if their bringing up is carried out more with the view of hardening them, and thus rendering them proof against the ubiquitous microbe, the need of sanitoriums would be much less than is at present the case. It is a fact, both instructive and pertinent, that in many of the coldest portions of the globe, colds are unknown. Nansen and his men, when in the Arctic regions, although they underwent exposure of every description, never once suffered from colds, but no sooner had they set their foot on their native shore of Norway, than they, one and all, caught severe colds. The experience of other Arctic explorers is the same. It seems then, probable, that there may be something in the theory of the infectiousness of colds, and that we shall have to give up our traditional belief to the contrary, however much we may have treasured it. If the infection theory be the true one, and if it be frankly accepted, a radical change in the method of treating colds must necessarily follow. If exposure is not the direct cause, but merely acts by so lowering the vitality, that the germs can gain an easy foothold, the rational treatment must be to build up and harden the constitution in such a manner that it will refuse to harbor the seeds of disease. Mothers and nurses are

too much afraid of fresh air and ventilation, but when they understood that the hot house plan of rearing children will produce a nation of weakly, delicate individuals, susceptible to every complaint that is about, they will doubtless see the error of their ways.

Child Workers in Great Britain

Some of the English journals have, within the past few weeks, been taking up, as a subject for discussion, the ill effect upon the health of the young, that working in factories exerts. At various times, social reformers have raised their voices in protest against the system, and have succeeded in having the age limit raised. The custom now is to employ children after the age of eleven years, as what are termed half-timers, that is, they work half the number of hours daily of the ordinary mill hands. The agitation now in progress is to still further raise the age limit. The London *Daily News* has been foremost in ventilating the question, and Mr. Charles Morley has contributed some brilliant articles to that paper, bearing on that point. The writer, contrasting the health and physique of rural and urban Lancashire remarks: "Go out into the beautiful rural districts of northwest Lancashire, away from the smoke-cloud of the textile area, we find the little lads and lasses are burly and strong, rosy-cheeked and bright-eyed, and as lively as kittens. Now the contrast, return immediately to the grimy depths of the factory fogland, and see what has happened to the branches here of the same family tree, after a few generations of premature factory life. The contrast between these factory and rural sections of the same people is, in fact, as striking as that between a fuchsia, grown in some stifling Whitechapel alley, and the fuchsia, as you see it grown on the shores of Cornwall and Pembroke, and along the verdant cliffs of the Scilly Isles. The medical opinions on the matter, correspond with these views. Dr. Torrop, a well-known physician of Lancashire, has collected notes of the children coming before him, demonstrating the irreparable injury

inflicted on them by the time system. A comparison of the half-timers with the children of all England shows the following deficiencies: At 11 years they are 7.5 per cent. below the standard; at 12 years, 11.2; at 13 years, 15.7; at 14 years, 19; and at 15 years, 26.5. We refer to this question as a further proof of the necessity of fresh air for growing children.

**The Donation of \$50,000 to
Roosevelt Hospital for a
Children's Ward**

This sum has been given to Roosevelt Hospital for the purpose of founding a ward devoted to the treatment of children, and has been placed under the care of Professor A. Jacobi. Although America prides herself, and justly so, upon the high degree of efficiency to which the study of children's diseases has been brought in this country, yet it cannot be said that a state of, by any means absolute perfection has been attained in pediatrics. There is room for further advance, and nothing will do more to spread a knowledge of this important specialty than the establishment of wards at the larger hospitals for children's maladies. That pediatrics requires on the part of these entering upon the career of a physician special study has already been sufficiently insisted upon, and is now regarded as a well proven truth. Perhaps, if it were possible, the founding of a hospital solely given over to the treatment and study of children's diseases, and constructed so that but one or two little ones should be placed in each ward, would be the ideal plan; but failing such an institution, the alternative system, as about to be adopted at the Roosevelt Hospital, will supply a much needed want, and should spur other philanthropists to open their hearts and pockets for a like purpose. It should be said that Professor Jacobi—than whom a more fitting choice could not have been made—has been appointed a member of the Medical Board of Roosevelt Hospital, has been given twelve beds, which he hopes shortly to increase to fifty, and has arranged to give two clinics a week at the hospital to the students of Columbia College.

OBITUARY.

Dr. CHARLES FAYETTE TAYLOR died at Los Angeles, California, on January 25, 1899, at the age of 71. He was born at Williston, Vermont, on April 25, 1827, and graduated in the Medical Department of the University of that State in 1856. Although a wide and experienced traveler in foreign countries and interested in many important matters outside of his profession, the years of his active life were spent in New York City, and he will be chiefly remembered and honored for his remarkable inventive genius as applied to the practice of Orthopedic Surgery, and for his devotion to the welfare of those who were fortunate enough to become his patients. He had the true physicians kindness and affection for those who applied to him for relief from pain and disability, and the generous heart which so endeared him to his family led him always to be foremost and untiring in giving the best practical help to any human being who was in trouble of any kind. He founded the New York Orthopedic Dispensary and Hospital, and was honored with medals and diplomas at Paris in 1867, at Vienna in 1873, and at Philadelphia in 1876. His best known books and articles are: "The Theory and Practice of the Movement Cure," "The Mechanical Treatment of Pott's Disease of the Spine," and "The Mechanical Treatment of Hip Joint Disease."

A. B. JUDSON.



C. Fayette Taylor

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, January 12, 1899.

HENRY KOPLIK, M.D., Chairman.

Heart Bigeminae.—Dr. EMILY LEWI presented a little girl with that rare condition among children known as the bigeminal heart. She had been in good health up to last summer, when she had developed what was considered to be acute cardiac pain. There were about six attacks of this kind, and when she first came under observation she complained of great precordial pain. She has very pronounced headaches, lasting for hours, during which she is nervous. The bigeminal heart is one in which the revolutions of the heart are in groups of two, i. e., the heart sounds are lub dub * * * lub dub * * * etc. This is but another way of saying that after every two revolutions there is an extremely long diastole. If after each two revolutions there is a complete systole, with a normal diastole, it is called a bigeminal heart. In the case presented, however, the second of the evolutions is not complete—a condition even more rare than the pure bigeminal heart. The speaker said that the literature of the subject is exceedingly meagre as regards its occurrence among children. In adults, a bigeminal heart is usually found in connection with aortic stenosis, and is supposed to show that the heart is poorly nourished. As a rule, the first of the two revolutions is complete, and the second is incomplete. This child is ordinarily extremely pale, and gives evidence of general malnutrition. The question, therefore, arose as to whether the condition of the heart was due to this poor nutrition. The pulse-tracings exhibited plainly showed that the condition here present was not that of a simple bigeminal heart, but what was known as the bigeminae alterans. The tracings also indicate the extreme compressibility of the pulse.

Dr. L. ENNETT HOLT said that he had not met with a similar case.

THE CHAIRMAN said that in a rather large experience, this was the first of the kind that he had observed. The prognosis in such a case was very bad because of the cardiac pain and the accompanying anemia. It is a disease of the myocardium, and involves the nervous supply of the heart.

Dr. LIPMAN said that he had seen one case of the simple bigeminal heart in a child.

An Apparatus Adapted to Simplify the Home Modification of Milk.—Dr. L. EMMETT HOLT presented an apparatus of this kind, which, he said, had been designed by Mr. Ernest Strauss, a manufacturer of glassware. A sixteen-ounce graduate is divided in six different ways, each representing a different formula for the modification of milk. Thus, for an infant a few days old, a suitable formula would be, fat, 2 per cent., sugar, 6 per cent., proteids, .6 per cent. To obtain this kind of modified milk it was only necessary to fill up to the milk-sugar-line in the first column of graduations with the milk-sugar, add boiled water to the boiled-water-mark, add cream up to the cream-line, milk to the milk-line and lime water to the line marked for that on the graduate. Similarly, for a child about 3 weeks old, when it is desired to feed according to the formula, fat, 2.5 per cent., sugar, 6 per cent., and proteids, .8 per cent., the graduations corresponding to the second formula are used. Six formulæ are provided to meet the modifications usually required during the first year of life. The last one covers the last three months of that year, and represents the formula, fat, 3.9 per cent., sugar, 3.5 per cent., proteids 2.5 per cent. The balance in bulk is made up with barley water. These graduates are made in three sizes, i. e., 16, 20, and 24 ounces, and the milk is mixed in these graduates and poured into the bottles for pasteurization or sterilization. The weak point in the method, Dr. Holt said, was, of course, to get the exact daily quantity in ounces, but this could be done by using two different sizes of graduates. The formulæ had all been calculated on a basis of 20 per cent. cream, i. e. the ordinary skimmed cream, or what is known as thin centrifugal cream. The speaker said that the method seemed to him a very simple and easy way of getting the results desired, and it placed the home modification of milk within reach of

many people who would not themselves calculate the formulæ in drachms or ounces.

Dr. HENRY DWIGHT CHAPIN said that it seemed to him an exceedingly valuable method—the best of its kind yet devised.

Dr. KOPLIK said that the difficulty he had experienced with the home modification of milk, was that he had had to send to a milk laboratory to get a uniform cream.

The Etiology, Forms and Diagnosis of Eczema, with Special Reference to Its Occurrence in Infants and Children.—Dr. S. POLLITZER read a paper with this title. He said that the modern definition of eczema is “a chronic, cutaneous catarrh, characterized by desquamation and itching, with a tendency to vesiculation.” The assertion that eczema is a diathetic disease, he characterized as a pure figment of the imagination. No infant had ever been known to enter the world with an eczema. From the point of view of the parasitic theory, all the phenomena connected with this disease appeared in a clear light. The so-called exciting causes were incidental and temporary ones, affecting the character of the cell. Unna had demonstrated the practically constant occurrence in eczemas of a well-marked diplococcus, which he had inoculated in pure culture, thus reproducing the eczema.

In its clinical aspects, eczema in early life differs from that seen later on in the tendency of the diseased parts to become secondarily infected with pus germs. As a rule, the skin of adults is a poor soil for the development of germs, but in very young subjects, any parasitic lesion is apt to soon develop the lesions of staphylococcus infection. In eczema of the scalp, impetiginous lesions soon develop, and the pus is quickly carried by the fingers to other parts of the body, giving rise to what is known as impetigo contagiosa. In his experience, impetigo contagiosa had been almost invariably associated with pediculosis of the scalp. While eczema might affect any portion of the integument, it exhibited certain preferences, just as in adults, except that in children it is more prone to appear on the cheeks. The comparatively frequent appearance of eczema on the cheeks in infants, is explained by the fact that the act of feeding produces a reflex vaso-motor disturbance—

a hyperemia of the cheeks—thus furnishing a favorable soil for the development of the germs. An eczema in this region is rarely primary, but usually follows eczema of the scalp. Scabies is often confounded with eczema, but the lesions of scabies are discrete, and the face and scalp are never affected. There are also usually one or more typical lesions on the soles of the feet in scabies, in infants. Eczema occurring in the summer is sometimes mistaken for prickly heat, but in the latter there is no infiltration or scaling. Every case of dandruff in infants should receive prompt and careful treatment, thus saving, quite possibly, years of annoyance or suffering.

The Treatment of Eczema in Infants and Children.—

Dr. CHARLES WARRENNE ALLEN presented this part of the subject. He said that although about twenty years ago eczema was thought to represent about one-third of all cases of cutaneous disease, later experience had shown that it did not constitute more than one-fifth or one-fourth. There are some general principles of treatment which apply to all cases of eczema, no matter what their etiology. Among these should be named superintendence of the clothing, especially of the diaper, regulation of the baths and of the nursing periods, examination of the mother's milk as to both quantity and quality, regulation of digestion, relief of constipation in both mother and child, and investigation of the various sources of irritation, such as the use of coarse towels and irritating soaps.

Infantile eczema requires proper nursing, and intelligent management, quite as much, if not more, than a physician's prescription. The secret of success in the treatment lay often in knowing when to stimulate and when to soothe, and in the selection, in appropriate cases, of anti-parasitic remedies. The predilection of eczema for certain localities was explained, in part, by the seborrheal element found in other portions of the body. He considered it to be of the utmost importance that the scalp should be brought to, and maintained in a healthy state free from crusts, if one would cure eczema on other parts. The treatment is almost exclusively local, as the health of these children is usually about the average of those of equal age and social station. As an ointment basis, nothing was superior to the old-fashioned zinc-oxide ointment. He had obtained very satisfactory results from a 3 per cent. watery

solution of methylene blue. In the treatment of eczema it should be remembered that even a very young infant could be taught to pass the urine and the feces at stated times, thus avoiding undue irritation of the soft parts. If the urine is not passed, on the contact of the buttocks with the cold rim of the chamber, the region between the pubes and the umbilicus may be irritated with the finger nail. Another method, applicable to male children, is to paint the end of the penis with methylene blue solution, and this would also be found a convenient method oftentimes of collecting urine for analysis. If the crusts on the eczematous area are not readily removed by the use of oil, or a solution of soft soap, he was accustomed to order a favorite French cataplasm, made of potato flour, mixed with lysol, or some similar antiseptic. When the eczema is impetiginous, because it has been inoculated with the germ of that disease, ammoniated mercury ointment would be found useful. The neurotic forms of eczema, occurring in children, in connection with errors of diet, are so essentially pruriginous affections, that anti-pruritic remedies are demanded. For the purpose of retaining dressings upon the head and face of infants, he has devised a little cap and mask, made of a single piece of muslin. Strips of sheet-lint, or lintine, are spread with the desired ointment, and over this the cap is securely fastened. This device is applied so tightly to the head and face that there is little chance of the child getting its fingers inside. The hands should be secured, however, by means of safety-pins in the sleeves, to the diaper, or other part of the clothing. At times, the rapid disappearance of eczema would be followed by internal disorder, causing one to suspect that the cutaneous disorder was an effort of nature to relieve the internal condition. These cases, however, are very rare, though they undoubtedly occur. The great majority of cases of eczema, in the opinion of the speaker, do best under a judicious combination of external and internal treatment.

The Influence of Diet in the Treatment of Eczema in Infants and Children.—Dr. HENRY DWIGHT CHAPIN considered this phase of the subject. He said that there was a close relation between external and internal epithelium, particularly in early life, when the young protoplasm is especially irritable. Thus, stimulating baths are often beneficial in indigestion, and con-

versely, intestinal fermentation is apt to cause cutaneous manifestations. The common form of urticaria in children is an eruption of small, itching papules, and as these are often injured by scratching, there results, in time, a truly papillary eczema.

In nursing infants when the eczema is caused by intestinal indigestion, it would usually be found that either the fats or the albuminoids are in excess. An examination of the mother's milk was often demanded. Where the fats are in excess, the baby is usually fat and flabby, but presents no special evidences of mal-nutrition. Where the proteids are at fault, the evidences of indigestion are more marked. Thus, the stools will probably contain hard, cheesy lumps, and the child will suffer from repeated attacks of colic. Of course, both the fats and proteids may be in excess in the mother's milk. In such a case, before taking the baby from the breast, the physician should endeavor to improve the digestibility of the milk by treating the mother. Nearly always it would be found that the mother is over-fed and over-stimulated, as, for example, by the use of malt liquors. These nursing women often take enormous quantities of meat. If the mother is made to take sufficient exercise in the open air, this alone will often solve the problem of overcoming the infant's indigestion. It was sometimes necessary also to reduce the number of nursings. When the mammary gland is used very frequently, the milk becomes thick and rich, while the secretion is more watery when the suckling is less frequent. It may be well in these cases to give water freely to the nursling, particularly in the intervals of nursing.

In the great majority of cases in which eczema occurs in bottle-fed infants, it would be found that the proteids are at fault. Sometimes the proteids may be reduced to 1 per cent., or .5 per cent., instead of, as is often the case, 2 or 2.5 per cent. Personally, he still believed that dilution of the milk with the cereals give good results in regard to the effect on the proteids. It must be recognized that the proteids of cow's milk are so very different from the proteids of human milk that it is not sufficient to merely change the proportions. There was, of course, a disadvantage in adding the cereals, i.e., the introduction of starch. This might, however, be largely obviated by the addition of diastase in some form. The late Dr. J. Lewis Smith was a great advocate of the cereals, and he was of the

opinion that by prolonged heating the starch could be converted into soluble starch, or dextrin. Dr. Chapin said that while it was well known that prolonged heating exerted a beneficial effect, he did not think it was to be attributed to a conversion of the starch into dextrin, as a series of analysis which he had made some years ago had demonstrated that the heating did not accomplish this, but rather affected the milk in a mechanical way. However, by the addition of diastase, in the form of some good malt extract, the objection to the introduction of decoctions the cereals might be reduced to a minimum.

Older children presenting evidence of eczema are almost always over-fed. The treatment consists in excluding fermentative foods as far as possible, and in giving these children milk, meat broths, perhaps a little meat, zwieback and similar articles of food. Almost invariably these children have been fed very largely on boiled potatoes. There is hardly anything more fermentable among the common foods than boiled potato, particularly if it has not been thoroughly boiled. Chronic acid intestinal fermentation often results from the imperfect digestion of such substances. The dietetic oversight of eczema must be continued for a long time if success is to be achieved. In this way only could relapses be prevented. If he were restricted to either the local or the internal treatment of eczema, he would prefer the internal treatment. This was not at variance with the teaching of modern pathology, because if the organism could be kept healthy and the soil thus rendered unsuitable to germ invasion, it was evident that as much ought to be accomplished in the way of treatment as by the local use of anti-parasitic remedies.

Dr. WALTER LESTER CARR presented, through the secretary, a photograph of an Italian baby, nine months old, who had been brought to the Out-Door Department of Bellevue Hospital with facial eczema. The child was rachitic, but was entirely breast-fed. A change of diet to fresh cow's milk and the internal administration of cod liver oil were ordered, and under this treatment, and without any local applications, the eczema rapidly disappeared. He was of the opinion that the majority of cases of infantile eczema require constitutional treatment.

Dr. J. A. FORDYCE said that he agreed in the main with the

statement of Dr. Pollitzer, that many cases of eczema are the result of parasitic infection, even though we do not know what kind of parasite is the cause of it. Personally, he believed that there must be a predisposition of the skin in order that eczema may occur, and it was not probable that only one germ was responsible for the condition. In certain families eczema develops on very slight causes, either external or internal. There were certain types of dermatitis excited in children by external irritants of various kinds, e. g., pediculosis of the scalp. He ordinarily used as an ointment base equal parts of lanolin and cold-cream, as it was particularly soothing to the inflamed skin. With this could be combined the ammoniated mercury in the strength of twenty or thirty grains of the mercurial to the ounce of ointment base. Seborrhoeic eczema afforded a culture medium for germs of various kinds. For this variety, sulphur should be used in the strength of ten to twenty grains to the ounce of ointment base, and with this might be combined oxide of zinc or bismuth. The usual type of eczema in infants and children was that which begins on the cheeks, forehead and chin, sparing the eyes, nose and mouth—that variety which Unna had given the name of nervous or reflex eczema. This is the most obstinate to treatment, and is most prone to relapse for months and years if the treatment is only local. Particular attention should be given in these cases to the regulation of the diet and of the bowel so as to eliminate intestinal irritation. Soothing applications to the skin are indicated, and should be made in the manner indicated by Dr. Allen. If this were done, and the patient prevented from scratching and secondary inoculation of the skin, there was a reasonable hope of cure. Where the surface is abraded and fissures are present, the application of a 2 or 3 per cent. solution of nitrate of silver seemed to be very beneficial. For crusts on the scalp, oils containing thymol or salicylic acid should be applied constantly until the crusts are softened and can be easily removed. After this, soothing ointments should be used. When the parts are partially healed, but some thickening of the skin remains, the ordinary stimulating applications may be incorporated with the ointment base—e. g. tar or resorcin.

Dr. B. LAPOWSKI did not look upon eczema as a disease, but as a symptom—a cloak for our ignorance. The best proof

of this was to be found in the diverse views expressed in the papers that had been presented regarding its etiology and treatment. Allusion had been made to the necessity for urinary analysis, but nothing definite had been said regarding the information to be derived from such interrogation of the renal secretion. At one time he had been taught that baths are very injurious in eczema, and while this was true in many cases, there were others in which baths were exceedingly useful. But the eczematous surface should be covered with some protecting ointment before putting the child in the bath, and it should be again be covered with the ointment after the bath. The kind of ointment would depend upon the variety of eczema present. The mask exhibited by Dr. Allen was not only very ingenious, but an exceedingly useful device, which he would be glad to use in his practice. We should feel very much indebted to the French school for insisting upon the importance of internal treatment. We would like to have decided the question as to whether it is better for an eczematous child to be nursed by its healthy mother, or be artificially fed.

Dr. THOMAS S. SOUTHWORTH said that it had seemed to him that the reason the eczemas of childhood had been the reproach of the general practitioner was that the opinion seemed to prevail that the physician had done his whole duty when he had written a prescription. On the contrary, the eczema should not only be treated locally, but the diet should be regulated and a regular action of the bowels secured. It was exceedingly important to prevent further irritation by confining the hands. It seemed to him better not to apply water to the eczematous areas, but to clean them with olive oil. In the large majority of cases the diet should consist largely of milk, and certainly the starchy foods, and especially potato, should be reduced. He heartily agreed with Dr. Chapin regarding the usefulness of the fluid malt preparations. After attention to the diet and constipation, the local treatment was usually simple, the important points being to avoid the use of irritating ointments. Probably the best ointment for the average case of infantile eczema was the ordinary zinc oxide ointment. When the skin was thickened and scaly, it might be desirable to add one-fourth of tar. For the eczemas about the ear, he knew of nothing better than a 2 per cent. ointment of ammoniated mercury.

Dr. L. E. LA FETRA said that many of the cases he had seen had been benefited by rendering the urine, which is usually quite acid, less acid, or even alkaline. Oftentimes the eczema seemed to him simply an evidence of a rheumatic diathesis—certainly these children often have a rheumatic family history. At intervals of from seven to ten days, it was well to give minute doses of calomel, or of iodide of mercury.

Dr. W. L. BANER said that he considered it rare that an excess of fat in an infant's food would cause eczema, because the addition of fat to the food, as for instance, in the form of cod liver oil, often improves the condition and accelerates recovery. He was inclined to believe that ointments not only serve as protectives, but as a means of giving an additional supply of nutriment to the diseased areas.

Dr. E. L. COCKS said that he felt that eczema was always secondary in importance to internal disorder. Three years ago he had expressed this opinion at the Harlem Medical Association, and since then had given the subject special attention. It had been a matter of surprise to him that many of these children survive the horrible decoctions poured into their stomachs. The nursing mothers often drink large quantities of tea, beer and other liquors. Both the urine and feces of these children are acid, and until this acidity is removed, he did not think the external treatment would avail much. Of all the methods of local treatment that he had ever used, the solution of methylene blue had proved to be the best. It was true that it discolored the skin and clothing, but it nevertheless effects a speedy cure.

Dr. J. MILTON MABBOTT said that he did not find that eczema was at all common in healthy children that were properly cared for, and in this statement alone one might find the chief indications for treatment.

Dr. POLLITZER said that it had always seemed to him remarkable that such diverse causes as intestinal disturbance and, for example, an excess of uric acid, should be held responsible for the definite diseased condition, known as eczema. Personally, he believed that these conditions never produce

eczema, and that there is but one cause for this disorder of the skin, as there is but one cause for a boil. In the case of every infectious disease, one notes individual variations as to susceptibility, or as to the locality infected. No one knows why ringworm will grow on the scalp of an infant, and not on the scalp of an adult. These so-called etiological conditions are often present in persons who never exhibit eczema.

Dr. ALLEN, in closing the discussion, said that he had treated over one thousand cases of eczema in the last eighteen months, and almost wholly without internal remedies. He gave internal remedies only in cases in which the children presented definite indications for medication. Thus, if a child had indigestion, the child would get well more promptly if the indigestion were treated medicinally, nevertheless he did not admit that eczema could not be cured without this medical treatment of the indigestion. The chief value of such treatment was to hasten recovery and prevent relapses. Water and soap are both irritants to an exuding eczematous skin, but the rest of the child could be bathed with safety. The eczematous parts can be kept clean with vaseline or cold cream.



PRACTICAL NOTES

Infant Feeding.—A famous author, in spite of the physiological fact known these thirty years, that there is saliva and pancreatic juice in the infant economy, has only lately been converted to a faith in farinaceous foods, and is experimenting with other than milk-sugar, and he comes to the conclusion, based on I do not know how many sleepless nights, that the feeding on woman's milk may be carried on too long. Many begin also to find out that cow's milk may be done to death by inconsiderate cooking, and that the latter is not rendered more sacred or more wholesome by calling it sterilization.—A. JACOB, *Phila. Med. Journal*.

Phenocoll in Malaria.—Dr. C. MONDANI reports, after an experience with seventy-five cases, that phenocoll proved an efficient remedy for malaria, and gave the most brilliant results, especially in chronic cases.

The Mortality Among Infants Reduced by Enemas of Artificial Serum.—The mortality among infants born before term at the Maternité of Marseilles has diminished from thirty-six in 1896 to six during the past year. This reduction is considered dependent upon the employment of rectal enemas of artificial serum, subcutaneous injections having been abandoned. The amount administered is three ounces once daily, or one ounce three times daily.—*Phila. Med. Jour.*

Dilatation of the Stomach was found to be present in 80 per cent. of children who were examined by Comby for this affliction. The cause was believed to be the great amount as well as bad food taken, and in the premature administration of solid food. In infants the finding of curdled milk by the gastric tube, five to six hours after meals, is diagnostic. Auto-intoxication is the result; washing out the stomach constitutes the best therapeutic measure.—*Der Kinderarzt*.

Bronchiectasis in children is treated by Dr. MOLLE D'AUBERNAS with clysma of balsamics, as follows:

R	Eucalyptol.....	5.0	(1.3 drams)
	Creasote.....	12.5	(3.2 drams)
	Tincture of benzoin.....	25.0	(6.4 drams)
	Balsam copaiba.....	40.0	(1.3 ounces)
	Oil of sweet almonds, q. s. ad....	100.0	(3.3 ounces)

One ccm. ($\frac{1}{4}$ dram) of this mixture contains the four remedies named in doses of 0.05, 0.1, 0.2, 0.4 ($\frac{3}{4}$ grains, $1\frac{1}{2}$ grains, 3 grains and 6 grains). A clyster containing 30 drops (1 ccm.) is employed in the beginning, mixed with milk, and the dose gradually increased to two teaspoonfuls of the mixture.

The slight burning occasioned by the clysma is not minded by the patient after a few days.—*Therap. Wochenschr.*

The Treatment of Whooping Cough with the serum of vaccinated animals. The serum was obtained from a goat which had been vaccinated with the vaccine of variola. The children treated were in the 12th to the 20th day of the disease, when the coughing paroxysms were very severe and prolonged, and the usual treatment had no effect. The results were, on the whole, quite gratifying; the paroxysms rapidly improved or ceased altogether eight to ten hours after the first injection of serum (4 to 20 ccm., according to the age of the child). Out of seventy-eight cases, recurrence took place only in four, which disappeared after another injection. No after effects were noticed.

Chronic Gastro-Enteritis.—An analysis of infantile mortality, due to gastro-intestinal diseases, during three summer months of two years, convinced Kœnigsberger that the high infantile mortality during summer cannot be ascribed to acute cholera infantum, but to chronic gastro-intestinal disease from artificial feeding. Not even $3\frac{1}{2}$ per cent. of healthy children were ill in the beginning with cholera infantum.

ABSTRACTS

REGARDING THE OPERATIONS FOR ADENOID VEGETATIONS.

SEIFERT (*Die aertzliche Praxis*, 1898, xi., 81): There is hardly any other form of disease in which individual views regarding the method of operation, as well as the anesthetic to be employed, are so diverse as in adenoid vegetations. Numerous authors are more or less adverse to the employment of an anesthetic, but these are opposed by a respectable number of those who advocate its use exclusively. The author had, in 1890, decided on the use of chloroform, and still adheres to this anesthetic. The *diagnosis* of adenoid vegetations in small children who cannot be examined rhinoscopically is made by digital exploration; older children can be examined with the rhinoscopic mirror, and whenever possible, the operation should at once follow this examination. The child is taken on the lap of an assistant for this purpose, and is firmly held. Narcosis with chloroform is induced by an assistant standing behind the child, but only pushed to the beginning of the first symptoms of excitation, and should only be a very light semi-narcosis. The assistant then passes his right index finger, armed with a metallic protector, in between the row of teeth from the right angle of the mouth, but only sufficiently deep as is necessary to hold the mouth open. The operator, who takes his position in front of the child, now introduces a palate hook with his left hand to drag the soft palate forward, and passes a Gottstein curette behind the soft palate to engage the adenoid vegetations within the hollow of the tongue-knife. When this has been accomplished, he rapidly dispenses with the palate-hook, lays his own hand on the top of the child's head, the better to control the curette, and cuts off the vegetations by a movement from above downward, accompanied by slight rotations toward the right and left side. By a rapid removal of the curette the loosened vegetations are thrown out, as the assistant during this whole procedure is obliged to keep open the child's mouth; now the head of the child is strongly flexed, to allow the blood free access to a bowl held before the mouth. After the primary hemorrhage has ceased, the operator once more introduces his index finger, to feel whether all hypertrophied tissue has been removed. If any should have been left behind, the knife is again introduced.

No local after treatment is instituted; the child is put to bed after the operation, and kept as quiet as possible, so that it may sleep a few hours. On the evening of the day of operation the unpleasant effects of the chloroform have passed away in so far that the child may already take some solid food. On the following day it is permitted to leave its bed, and on the third day it is allowed to leave the house, if the weather is favorable. The patient need not be kept from school for a longer period than three to four days.

The author has never experienced any bad effects from the administration of chloroform in the great number of operations which he has done. Copious hemorrhage after the operation he encountered only in two cases; in both cases it became necessary to tampon the naso-pharyngeal cavity with iodoform gauze by way of the mouth. One point in the after treatment should, however, not be overlooked, that is the resumption of normal nasal breathing. Children under the age of 4 years will rapidly again acquire the habit of breathing through the nose, if the nurse or mother is not instructed to cover up the mouth of the child during the day, when it shows a tendency to become a mouth-breather. If now the children keep their mouths closed during the day, the nocturnal breathing through the mouth, snoring, "pavor nocturnus," and other disturbances, caused by mouth breathing during sleep, will cease. Older children will have to receive direct instructions for the resumption of nasal breathing, the nurse being instructed to teach breathing gymnastics twice daily, a quarter of an hour at a time, the mouth, of course, being firmly closed.

FORMS AND TREATMENT OF INFANTINE COLITIS.

L. GUINON (*Gaz. hebdomadaire de médecine et de chirurgie*, 1898, No. 27): Attempts to isolate individual forms of the affections of the digestive tract in children, to locate them in this or that portion of the intestine, will always result only in an artificial but not in an anatomical grouping, for the reason that the childish gastro-intestinal canal presents a single entity, and the more so the younger the child, because the stomach is also always involved in intestinal affections. It is true that here and there gastric or intestinal symptoms may preponderate. Where the latter is the case, the symptomatic differentiation of a colitis or entero-colitis, which expression the author prefers, as more exact than enteritis follicularis or catarrhalis, is justified, especially in older children, although even here gastric symptoms (vomiting, coated tongue, etc.) are not absent. Acute colitis—the author describes minutely a grave, a slight, a localized or partial, and a dysenteric form—is met with in greatest number in children under 3 years of age, occasionally distributed as an epidemic affection. Its cause is the ingestion of spoiled food or other irritating substances, raw fruit, spoiled milk, excessive doses of calomel, clysmata composed of irritating matter, etc. A complication of an enteritis may make its appearance after typhoid from a mistake made in the diet, after measles, after a gastro-intestinal catarrh, or, according to the author's observation, it may take the place of an attack of asthma. In older children we usually find a neuro-arthritis hereditary. Chronic colitis, of which the author mentions the indolent, the enteralgic, also a simple form, and one presenting dysenteric paroxysms is, as a rule, observed only after the fourth year of life, sometimes it occurs as a sequel to an acute colitis. Frequently its cause is a chronic constipation due to intestinal atony, which has been frequently treated by all kinds of irritating remedies. The minute description of the single clinical forms, as well as the tabulation of the thera-

peutic remedies recommended may be found in the original, especially as nothing new has been said of the latter.

The author very rightly lays great stress on hygienic, dietetic and on hydropathic rules.

CONTRIBUTION TO THE ETIOLOGY OF WHOOPING COUGH.

BEHLA (*Deutsche med. Wochenschr.*, 1898, xxiv., 299): We have passed the period in which whooping cough was looked upon as a simple catarrh, as a neurosis, etc. Its whole nature, its infectious quality, and its epidemic character mark it for an infectious disease. Without a doubt the virus clings to the expectoration; the latter has from time immemorial been looked upon as the carrier of the infection. While, however, some place the responsibility of infection on a hyptomycete, and schizomycete and others attribute it to the lowest forms of life. As a result of experiments in all stages of the disease, the careful daily control of individual cases, the observation of the sputum artificially kept at the temperature of the body in test-tubes and under cover glasses, the author has come to the conclusion that the exciting cause of whooping cough is a micro-organism not of a bacterial nature, which is not found in the blood nor in the epithelium, and does not possess an intracellular growth, but that it belongs, as Deichler and Kurloff also believe, to the protozoa. Its whole deportment speaks for it that it is an ameba, which, besides increasing by division, also presents the formation of spores. In the catarrhal state the parasite will only be found sparsely; here we rather meet with the amebic forms—at the height of the cough, in the convulsive stage, the round, oval, glittering bodies are in the ascendant, besides vegetative conditions—in the last stage the parasites again diminish in number, as the cough disappears they are absent. The favorite seat of the parasites is the mucous membrane of the trachea, from the lowest branch of the trachea upward.

As regards the examination for the parasite, the author advises to catch the transparent, slimy sputum of the first stage in a glass, previously warmed, and to examine it at once without staining it on a previously warmed object glass in a microscope artificially warmed. The dry preparation distorts the picture.

In a therapeutic sense, bromoform and antipyrin decidedly reduce the attacks. They are, however, only symptomatic remedies, the best antiparasitic remedy which we possess at the present time, is undoubtedly quinine.

FOR OPHTHALMIAL JOINT DISEASE OF CHILDREN.

R. CLEMENT LUCAS (*British Medical Journal*, 1885) at the meeting of the Royal Medical and Chirurgical Society, held in London on January 24, again drew attention to a form of joint disease in infants which he originally described in the columns of the above named journal in 1885.

During that year Mr. Lucas published in these pages three cases of ophthalmia neonatorum complicated with joint inflammation, which, in some instances, was of a most acute kind, and his contention was that the joint inflammation was secondary and dependent upon the purulent ophthalmia from which the infants were suffering. He argued, that just as gonorrhea in adults is capable of producing, sometimes, an intense arthritis and at others a subacute synovitis, so the same virus inoculated during parturition on the conjunctiva of infants may be productive of analogous joint affections a few weeks after birth.

The observation seems to have attracted little attention in this country, where only one additional case appears to have been described, but abroad it was at once recognized as a hitherto undescribed disease of infancy, and Mr. Lucas was able to give references to twenty-three cases, chiefly from foreign sources.

The joint complication is undoubtedly a rare one, but were it better recognized as consequent on the ophthalmia many more cases would probably be published. The direct sequence of one on the other has, moreover, been subjected to bacteriological proof, for the gonococcus of Neisser has been shown to exist both in the secretion of the conjunctiva and in the fluid aspirated from the inflamed joints. The tendency of the disease is towards resolution and complete recovery if the infecting source be actively treated, but occasionally, as with gonorrheal rheumatism of adults, suppuration takes place, and in one case, at least, the arthritis began after cure of the ophthalmia. Mr. Lucas raised the question whether, when suppuration occurs, we may not be dealing with the added effects of a second pyogenic microbe, for in two of the published cases in which suppuration took place the gonococcus was found associated in the one with streptococcus and in the other with staphylococcus.

ON FUNCTIONAL NERVOUS AFFECTIONS IN CHILDHOOD.

SAENGER (*Munch med. Wochenschr.*, 1898, *xliv.*, 187). The author, in accord with Bruns, Arndt, and others, does not at all consider the appearance of hysteria and still more, that of neurasthenia in children, as a very rare occurrence, as has, for example, been claimed, even in recent times, by Sachs, of New York.

The material which underlies his studies was derived from a large private practice and an enormous clientele of the Angen-poliklinik of the old allgemeine Krankenhaus St. George, during the past eight years. A remarkable fact in the course of this investigation was that the greater number of neurasthenic children came to the poliklinik for the treatment of visual disturbances, which had to be looked upon as "nervous asthenopia."

The four groups in which Saenger has divided his material merge into each other without any sharp border line:

- 1.—Neurasthenia.
- 2.—Hysteria.
- 3.—Hystero-neurasthenia.
- 4.—Hereditary neuropathy (psychopathic inferiority).

The symptoms of the individual groups are as follows:

1.—Patients of this class are, as a rule, anemic, anxiety, easily become tired, complain of palpitation, vertigo, precordial angina, increased vaso-motor irritability, feelings of displeasure, constipation, insomnia (difficulty in falling asleep, *pavor nocturnus*) frequent trembling of the eyelids, on lightly closing the eyes; at times true phobia.

2.—The intelligence is greater than in the neurasthenic, the facial expression is watchful, observing, sly, stigmata are present, as in the hysteria of adults, mono-symptomatic appearances, aphonia, contractures, paralysis of extremities, cough, tremor, anomalies of carriage (hysterical scoliosis, torticollis); blepharo-spasm, ptosis, hemichorea; more rarely amaurosis, convulsions may occur, also some states which remind one of hypnosis.

3.—This form is most frequently observed in children, occurs under manifold symptoms and interesting complex forms in many combinations, very little intelligence, indifference, pain in the head and the eyes, nervous asthenopia, photophobia, contraction of the visual field, absence of the conjunctival reflex, absence of the throat reflex, enuresis nocturna, somnambulism, hallucinations.

4.—Hereditary taint; during the first few years of life frequently occurring convulsions, later ugly conditions, in the form of making grimaces, and choriform movements. Great sensibility and sensitiveness, stubbornness, uncontrollable temper, fear of being alone, periodical naughtiness, viciousness, strongly egotistical qualities, cruelty to man and beast.

Frequently these patients, although being stunted in bodily growth, show one-sided talent. They present, on the whole, the picture of psychopathic inferiority.

The percentage of boys and girls in all these groups is the same. The ages most usually affected are between ten and fourteen years, a casually important period, which seems to demonstrate the unfavorable influence of the present teaching and school system.

Prognosis is favorable in the first three groups, more so than in the adult; in the fourth, however, especially with premature development it is unfavorable.

The therapy applied by Saenger varies with the individual case; a general neurasthenic treatment—douches, cold rubbings, baths, electricity, absence from school, improvement in the nutrition, a chance for recuperation, energetic suggestive treatment as to growth, hypnosis is never employed, protective spectacles with dark glasses.

Severe cases of hysteria and neuropathies should be treated in an institution.

As regards the theoretical idea of hysteria and neurasthenia, Saenger teaches, in short, that there is no sharp line of demarcation between the two, and that the old definition of hysteria by Moebius, according to which all those morbid changes of the system are hysterical which are caused by imagination, can no longer be accepted. Stigmata, contraction of the field of vision, anomalies of the reflexes, cannot be accepted as being caused by such imagination, as this author himself admits, Ac-

according to Saenger, we are dealing with a neuro-psychosis in hysteria and not with a psychosis.

The origin of these morbid conditions are found by Saenger in the defective conditions of life, the artificially forced premature maturity, the childish egotism, the excess of studies imposed on children in the schools, and the early training, especially of the children in the poorer classes, to work, with insufficient time for sleep and recuperation. The medical supervision of the schools by competent physicians appointed for that purpose would develop an extraordinary favorable influence in these diseases.

SERUM THERAPY AND DEATH DUE TO DIPHTHERIA.

KASSOWITZ (*Vortrag in der K. K. Gesellschaft der Aerzte, March 27, and June 3, 1898. Der Kinderarzt 1898, ix., 197*) lays stress in his introduction to the fact, that because a curative measure is generally accepted it is no proof that it is efficacious, as has been demonstrated in the methods formerly generally accepted and at the present time altogether dropped, for example, venesection in pneumonia, the scarification of the germs in convulsions of infants, etc.

If we investigate the reasons why antitoxin was accepted we meet with a great variety of opinions. Even the theoretical grounds of serum-therapy are questionable, as the specific nature of Loeffler's bacillus is now beginning to be doubted in many quarters, the complete exactitude of the experimental researches could also not answer for the success in treatment, as has been shown in tetanus, cholera asiatica, etc.

We can only go by experience, where we certainly find that the great majority of writers give a favorable verdict. The statistics do not show the general mortality but only speak of percentages, which is altogether incorrect, for it is much easier to testify that a person has died of diphtheria than it is to testify that he has suffered from an attack of diphtheria. It has also been shown that even where the injection was made during the first three days of the disease many have died (42 per cent. who died in spite of serum treatment).

Where the patient is early admitted to a hospital the material of the statistics is materially improved. Children are sent to hospitals with very slight forms of diphtheria. Furthermore, we now declare as diphtheria pharyngeal affections presenting deposits in which Loeffler's bacillus is found; even very slight forms are declared to be diphtheria and serum injections are made. Since antitoxin has been introduced, the number of children received in the wards for diphtheria has increased enormously, the same may be said of the number of cases reported. The statistics of the present time should not by any means be compared with the older statistics. From what has been said, the logical sequence obtains that the percentage of mortality has decreased. We should also take into consideration that the mortality of diphtheria previous to the serum treatment was, in fact, not as high as is now generally stated. Furthermore, the percentage of mortality is being artificially lowered by leaving out the

moribund and septic, and those cases which are accompanied by bronchial croup.

Reliance should only be placed on the general mortality. An occasional marked lowering of the yearly mortality in diphtheria has also been formerly observed. On the other hand, Petersburg, Trieste, etc., have shown an enormous increase of the general mortality since the introduction of antitoxin.

Passing to clinical observations, the author mentions that if the serum had been a success the absolute number of deaths would have been less.

Observers of a large amount of material (Brown, Rose,) state that they have come to look upon the serum as without any effect. If the serum renders the diphtheria poison innocuous we could positively expect that post-diphtheritic paralysis and nephritic affections did not make their appearance at all, or only to a slight degree; this does not, however, occur. Furthermore, descending croups would, in this case, be much more frequently avoided; as a fact, however, the greater number of patients succumb to the progress of the process.

As regards the fever, Behring has reported that it declined within twenty-four hours after the injection; observation made by the author and other observers have, however, proved that this takes place in many cases also where no injections have been made.

A favorable effect on the general condition has not been observed, even by Professor Escherich, who is an advocate of serum treatment. Baginsky reports a favorable influence on the local process; his assistant, Dr. Schatz, however, maintains the reverse, from the observation of the same cases.

Where an operation becomes necessary the previous injection of antitoxin also does not prevent the infection of the wound.

Since Loeffler's bacillus has also been found in recent times in the diphtheria of scarlet fever, and virulent bacilli are sometimes found in healthy persons, we are justified in raising a doubt as to this bacillus being really the true exciting cause of diphtheria.

The excuse that the bacillus only acts on the wounded mucous membrane in a pathogenic manner cannot be accepted, for it has also been present in simple angina, in tonsillotomy wounds, in aphthæ, and stomatitis ulcerosa, cases in which we certainly cannot speak of an intact mucous membrane.

Loeffler's bacillus may be demonstrated after the cure of diphtheria for weeks or months. We look upon recurrent typhoid as cured when no spirilli can be demonstrated any more in the blood. Why should this not also be the case in diphtheria if Loeffler's bacillus is the exciting cause?

Bacteriological study has done extraordinary things for us, and is certain to do still more. It has, however, still not solved the problem as to the true exciting cause of diphtheria.

ANTITOXIN AND DIPHTHERIA.

The value of the antitoxin treatment in diphtheria is so universally acknowledged by the medical profession in this country that it seems unnecessary that an editorial should be written even with the purpose of emphasizing its value; yet there are still certain persons who proclaim from the housetops that this plan does not rest upon a scientific basis, and that in practical application it fails to do that which is claimed for it. In some instances this view simply rests upon dogmatic assertions; in others it is apparently fortified by the quotations of statistics, and in no instance is this more noteworthy than in some figures which have been published by Kassowitz upon the reduction of mortality of diphtheria by means of this treatment.

When we come to study a large body of statistics dealing with the prevalence and mortality of a disease which afflicts individuals at widely distant points, it is proper that we do not lose sight of the fact that epidemic diseases vary greatly in their severity in different places and at different times, and in some instances without our being able to explain the cause of their moderation or virulence. It is also true that increased hygienic learning is doing much to limit the frequency and severity of all infectious maladies, and that for this reason too much credit is not to be given to any plan of treatment until it is clearly shown that these factors which we have named have been eliminated, as far as possible, and that the plan is really worthy of the credit which is claimed for it. When statistics are freed from these doubts they carry with them conviction; and Kossel has recently published some striking facts in regard to the mortality of diphtheria in Germany, which are as follows, and which indicate a marked reduction in the death-rate, due, at least in part, to antitoxin:

Year.	Absolute number of deaths from diphtheria in German towns over 15,000.	Berlin during same period.	Rate per 10,000 living.
1886.....	12,211	1,662	12.4
1887.....	10,970	1,392	10.7
1888.....	10,142	1,195	9.6
1889.....	11,919	1,210	10.8
1890.....	11,915	1,601	10.5
1891.....	10,484	1,006	8.4
1892.....	12,505	1,342	9.7
1893.....	16,557	1,637	13.0
1894.....	13,790	1,416	10.1
1895.....	7,611	987	5.3
1896.....	6,262	559	4.3
1897.....	5,208	546	3.5

From this table it will be seen that in 1896 and 1897 the minimum mortality from diphtheria in Berlin was 589 and 546, whereas from 1886 to 1895 the mortality varied from 1066 to 1662. Or, again, that the rate per 10,000 persons living in 1886 was 12.4, in 1893 it was 13 and 1894 10.1, which suddenly fell in 1895 to 5.3, in 1896 to 4.3, and 1897 to 3.5. A similar extraordinary diminution in mortality has occurred in Paris, the mor-

tality from this disease during the last twenty years, according to the *Annuaire Statistique de la Ville de Paris*, being as follows:

Year.	Mortality, absolute number.	Deaths per 1,000 living.
1877.....	2,393	12.1
1878.....	1,995	9.3
1879.....	1,783	8.4
1880.....	2,048	9.4
1881.....	2,214	9.9
1882.....	2,244	10.0
1883.....	1,781	8.4
1884.....	1,928	8.6
1885.....	1,655	7.4
1886.....	1,512	6.7
1887.....	1,585	7.0
1888.....	1,729	7.6
1889.....	1,706	7.5
1890.....	1,668	7.3
1891.....	1,361	5.6
1892.....	1,403	5.8
1893.....	1,266	5.1
1894.....	1,009	4.2
1895.....	435	1.8
1896.....	444	1.8
1897.....	300	1.2

Paltauf states that these figures apply equally to the provinces of France as to the capital, and it is noteworthy that it was in these years that diphtheria antitoxin became widely employed. An additional striking fact is that while the mortality fell in this miraculous way between 1894 and 1895, in Germany and in France, it failed to so fall in Austria, where the treatment was not instituted until the following year, but as soon as it was instituted, a similar decrease in mortality occurred.

It has been claimed by Kassowitz, that while the capitals of Germany, France and Austria show a startling decrease in mortality, London and St. Petersburg fail to do so, and for this reason the credit should not be assigned to antitoxin, but to general conditions prevailing in the capitals named. As a matter of fact, London is an apparent and not a real contrast. To those who are acquainted with the details of these matters, it is a well-known fact, to use Paltauf's words, that the serum on the London market at that time was a worthless article, for he states that an English manufacturer of pharmaceutical preparations between January, 1895, and July, 1896, issued tubes of 40, 60, 100, and 130 units, with 300 from tests made of the serum as a maximum, but only two tests out of eleven gave this. Similarly poor results were obtained by another manufacturer. Further than this, much of the serum imported from Germany into London at that time was inferior in quality, and tubes said to contain 250 units only contained 225. In the case of one of these antitoxins only one experiment out of seven gave a tube containing 300 to 400 units, although each was warranted to contain 500 units, while those which were guaranteed to contain 1,000 units contained not more than 875. Still further,

another German house supplied in London an antitoxin which was warranted to contain 100 units, but which in experiment only gave 17.5, while those tubes sold as containing 200 units gave 30 units.

In St. Petersburg, Rauchfuss estimates that the mortality has been reduced to a great degree by the use of antitoxin, and Dreier gives 526 cases treated, with a mortality of 16.3 per cent., in an epidemic, against a previous mortality of 40.3 per cent. in 1890, when no epidemic was raging. A considerable number of similar statistics are to be found in the *Medical Press and Circular*, London, of September 28, 1898.

Kassowitz asserted that within three days after the commencement of the antitoxin treatment large numbers died, but Paltauf shows that the greatest advantage is obtained from the serum in those who usually die within three days, which is in direct opposition to Kassowitz's view. He denies absolutely the statement of Kassowitz, that the use of antitoxin increases the danger of nephritis, and, finally he adduces evidence to show that the administration of antitoxin for the purpose of immunizing those who are exposed to diphtheria is beyond all doubt a reliable method of protection.—*Therapeutic Gazette*.



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ORIGINAL ARTICLES

MULTIPLE SARCOMATA IN A CHILD.*

By FREDERICK A. PACKARD, M.D.,
Philadelphia.

DANIEL M. WHITE, aged $3\frac{1}{2}$ years, was brought to the Children's Hospital, on April 26, 1898, and admitted to the surgical ward, because of some trouble with his hip.

He is the youngest of four children. There is no history of disease in his family that would have any bearing upon his present trouble. Until the summer of 1897, he was a strong, healthy child, having never been ill, except for an attack of measles. During that summer he had pain in the abdomen, crying out at night, grinding of the teeth, and fever. Following treatment for worms, many seat-worms were passed, but no abatement of the symptoms was noted. With the symptoms above named, he was in bed during the whole summer. To them were later added anorexia, drowsiness and diarrhea, (possibly a prolonged attack of typhoid fever). One month before his admission to the hospital, he was allowed to get out of bed, when he complained of pain, and was found to limp, on walking. Not until a week before his admission was there any visible trouble with the hip.

On his admission it was noted that the right thigh was distinctly larger than the left, the difference in circumference being one inch. There was considerable rigidity about the left hip joint, the lumbar curve was absent upon flexion, but passive movement of the joint gave no pain. Pressure on the tro-

*Read at January meeting of Philadelphia Pediatric Society.





chanter did not produce pain. The left leg was distinctly "spared" in walking.

Owing to the rigidity about the hip, extension was applied. Three days later rigidity had disappeared, motion of the leg produced no tilting of the pelvis. Examination showed that the swelling of the left thigh was produced by a tumor mass, which was apparently attached to the middle of the sartorius muscle. It was then described as of the size of a small walnut, and as being free from pain. Later examinations confirmed the absence of joint trouble.

The conditions remained stationary until May 19th, when it was noticed that there was a decided swelling of the left scapula, the tumor having the shape of that bone. The left shoulder-joint was not affected. The mass in the thigh is noted as somewhat larger than on admission.

Two days later he complained of pain under the left angle of the jaw, but nothing abnormal was found at that place. His general condition remained good, but he was sent to the country branch, on account of the heat of the city.

On August 31st, there was found a marked enlargement of what appeared to be a lymphatic gland at the right angle of the jaw. The mass was freely movable, not tender, did not fluctuate, and seemed painless. The swelling on the left thigh was steadily growing.

During the next month, the tumors decidedly increased in size, and the child began to lose flesh. During this time he was treated with corrosive sublimate (gr. $\frac{1}{96}$, three times daily), until salivation was produced, without benefit.

The masses slowly increased in size, and on October 25th, Dr. Le Conte removed for diagnostic purposes one of the tumor masses from the right side of the neck, and a portion of one of the scapular tumors. These were hardened, and sections made by Dr. Hand showed typical round-celled alveolar sarcoma.

By the middle of November, his wounds were practically healed, and he was transferred to the medical ward under my care.

Examination then showed him to be very pallid, with almost white mucous membranes. The pupils were equal and natural. On the right side of the neck, below the angle of the jaw, there was a group of rather firm globular tumors, appa-



rently matted together. In the left axilla, there was a large mass of apparently enlarged glands filling that space. The left scapular region was prominent, from the presence of two large masses, firmly attached to the bone, or to the supra, and infra-spinous muscles, and separated by a sulcus over the scapular spine. The superficial diameter of these two masses, measured together were 16 by 10 cm.

The apex beat was in the normal position, and the heart showed nothing abnormal. There was considerable dilatation of the superficial veins of the abdomen, the current being upward. These veins were slightly more prominent upon the left side. The lower portion of the sternum seemed to be pushed forward. Over the upper portion of the left chest there was marked dullness, but otherwise the pulmonary note anteriorly was well preserved. The breath-sound over this dull area were broncho-vesicular in character. Posteriorly there was marked dullness in the left spinal gutter down to the level of the scapular spines, but except for this the examination of the back showed nothing out of the way. The liver and spleen were of normal size, and the abdomen, while somewhat distended, showed nothing abnormal, except for a tumor about the size of a duck egg in the left iliac region, just above Ponpart's ligament.

The left thigh was the seat of a slightly movable, moderately firm tumor, situated near the middle of its length, and increasing its circumference to 30 cm. The mass was fusiform in shape. Above it there was what felt like a large gland over the saphenous opening. There was no edema.

A few days later, the blood was examined with the following results:

Red cells.....	2,840,000
White cells.....	11,000
Hæmoglobin.....	31 per ct.

Porkilocytosis marked. Many macrocytes and nucleated red cells. A differential count of the leucocytes gave:

Poly morphonuclears.....	51 per cent.
Small lymphocytes.....	29.5 " "
Mononuclears.....	9 " "
Transitionals.....	4 " "
Eosinophiles.....	6.5 " "

There were also a few myelocytes.

The eyes were examined by Dr. Randall, without anything of interest being found. The hopelessness of other methods of treatment, led me to think of the propriety of using here injections of the toxines of streptococcus erisipelatosus and bacillus prodigiosus. My plan was frustrated by the boy's parents removing him to his home for some family celebration. He has not been returned to the hospital up to the present time.

The case is one of many which suggests the possibly close connection between sarcoma, Hodgkin's disease and leukemia—a connection that is in some ways apparent; in other ways quite vague. It is in order to add to the available material for the future solution of this important question that the present instance is placed on record.



CONGENITAL TALIPES EQUINO VARUS: CIRCUMCISION.*

By WILLIAM L. RODMAN, A.M., M.D.,

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Case I.—This patient has talipes varus, which means that she walks on the outside of her feet. There are four varieties of talipes; talipes varus, in which the child walks on the outside of the foot, and is the common congenital form. Talipes valgus is the form in which they walk on the inside of the foot. The cases of talipes equinus walk on the toes, as they are unable to put the foot flat upon the ground. The rarest type of all is the talipes calcaneus, in which the patient is unable to put the toes down.

Talipes may be congenital, or it may be acquired. The congenital variety is not an uncommon affection, and it would seem to be far more common in some races than in others. Recent investigations have taught me to believe that talipes is extremely rare, if it occurs at all, in the negro race. I mean congenital club foot. An investigation also teaches me that among the North American Indians it is very rare. It is possibly not so rare with the Indian as it is with the negro, on account of the fact that the Indians have a habit of putting such children to death soon after birth; therefore they might have such deformities, and they would not be seen in an ordinary intercourse with the various tribes. The negro, for some reason, enjoys a singular immunity to all congenital deformities. In twenty years practice I have never seen a case of congenital club foot in the negro. I have never seen a case of spina bifida in the negro. These congenital deformities must be exceedingly rare, then, with the black race.

I find, upon examination, that this case is one of talipes equino-varus. It is a combination of the two most common varieties. The tendo Achilles is not only drawn upward, but the plantar fascia and the tendons are also contracted, and we

* Clinical Lecture delivered at the Kentucky School of Medicine Hospital.

have a combination of the two varieties, an equino-varus rather than a pure case of varus.

The indications for treatment are to cut the tendo Achilles, and by twisting, using some force, under anesthesia, to bring the feet in good position. It may be necessary to cut the plantar fascia.

To cut the tendon, the knife is inserted behind it, and, after turning the cutting edge upward, the fibres are quickly severed. After doing this, it is easy to drop the heel and overcome the talipes equinus.

In operating upon these cases, it is entirely a matter of choice whether you insert the knife from the inside or the outside of the foot. I have operated upon perhaps a hundred of these cases, and have never had one suppurate. I believe that I should not have to cut the plantar fascia, but as the feet could not be easily moulded into proper position, it became necessary to cut the planta fascia.

Now we have corrected the deformity by cutting the tendo Achilles, and the plantar fascia, upon both sides, and, after moulding the feet into position, we shall maintain it by putting on a well-adjusted plaster of Paris dressing.

We shall maintain the gain that has been made by keeping the feet in plaster dressing for at least a month, and after removing it, we will instruct the mother to move the parts, do massage, and in this way stimulate the muscles, which have been in a semi-paretic state for so long. It sometimes requires a great deal of patience and intelligence on the part of the mother in order to get a good result after the surgeon has done his work.

The dressings will be left on, provided circulation in the toes is all right, for ten days or two weeks, then the foot will be moulded into still better position, and another dressing of a similar character applied. At the end of four weeks all dressings will be removed, and the mother given directions to knead and rub the parts frequently, to stimulate the muscles which have been so long in an inactive state.

Case II: CIRCUMCISION.—This patient, aged 18 months, is brought to us for circumcision. Upon examination we find the mucous membrane adherent to the glans. We first break up these adhesions, and then clip off the superfluous skin with

scissors. The mucous membrane is incised, and cut even with the skin. By this method no stitching is necessary. If you desire to put in stitches, use very fine catgut, which will undergo absorption in the course of a week. Good approximation will occur without suturing. I accomplish this by means of a dressing of gauze, with a hole cut in the center, through which the glans is allowed to protrude. This dressing, as you see, fits closely over the penis, and I find that it holds the cut surfaces together beautifully. We put a piece of rubber tissue over the gauze, a hole being cut in it also, and the dressing will not become soiled. These patients do not have erections, after circumcision, as do adults, which is of the greatest importance in the management of the case.

Briefly, the technique of circumeision is as follows: In drawing the prepuce forward over the glans, be sure and not to cut while you are still making traction on the prepuce, as you may, in that way, take off too much. Pull it down to the proper point, then hold it with the forceps, being sure that the forceps are held obliquely so as not to include any portion of the glans, and snip off the prepuce in front of the forceps. No matter how you cut, you will find that the mucous membrane will not be severed on a line with the skin; it is so resilient that it gets out of the way of the knife, or scissors. You will have no vessels to tie, as the stitches already mentioned will include the small artery at the dorsal aspect of the penis. Then apply the dressing shown you to-day. Do not use sutures, except in the adult, and then it is better to use fine catgut. The result will depend largely upon the care with which you dress the case. The operation is really of less importance than the dressing.

THE PRÆCORDIAL AREA IN CHILDREN, RANGING
IN AGE FROM SEVEN TO PUBERTY, AND ITS
RELATIVE VALUE IN THE DIAGNOSIS OF
HEART LESIONS IN CASES PRESENTING
SYSTOLIC MURMURS.*

By WILLIAM J. BUTLER, M.D.,
Chicago.

WHILE it is generally accepted that the precordial area in a child is relatively larger than that in the adult, no special study with a view to determine its accurate limit seems to have been made in very earlier years. Smith, in his work on Diseases of Children, states "the position of the heart in childhood has not been hitherto sufficiently understood," and quotes from the more recent anatomical studies of Symington, who found that the position of the heart and great vessels is, normally, practically the same as in the adult, but says that the cardiac impulse in infants and children usually takes a more external position than in the adults, and that it is usually in the nipple line or may extend $1\frac{1}{4}$ inches beyond it.

Rotch is inclined to think that in the first few years of life the apex is higher, but later assumes the position found in the adult, or even lower if the inferior portion of the sternum has been slow in developing.

Holt quotes directly from Sahli, whose diagram he presents, and gives the area of relative dullness as commencing above in the second interspace or lower border of second costal cartilage to the right, at the parasternal line or slightly beyond it, to the left at or slightly beyond the mammillary line, this depending on the age of the child, the variations at different ages not being mentioned. Area of absolute dullness upper border of third intercostal space, sometimes third costal cartilage, to the left at point between parasternal and mammary lines, to the right, the left border of the sternum.

To Whitney must be given special credit for his work on this subject, so far as area of relative dullness is concerned.

* Read before the Chicago Society of Internal Medicine.

He has found that the enlarged precordial area in a child is first noticed at the sixth year, and continues until puberty. He uses the diagram prepared by Weil, who states that the enlarged area indicated in some persists to the fourteenth or fifteenth year. The area of relative dullness given by Whitney is as follows:

Upper border—second interspace.

Left border—one-fourth to one-half outside mammillary line.

Right border—meets the liver dullness at $1\frac{1}{4}$ to $1\frac{1}{2}$ inches to right of median line.

It is to be noted that Whitney deals entirely with relative dullness. Sahli has pointed out that too much reliance cannot be laid upon the relative heart dullness in children, as it may be taken beyond the actual cardiac limit because of the thin and yielding chest wall found in children and the thin layer of lung tissue lying between the heart and chest wall, through which an airless, organ like the heart resounds beyond its actual limit, notwithstanding caution in regulating the intensity of percussion. Kovars likewise teaches that the only reliable signs in determining cardiac area, so far as the diagnosis of cardiac lesions is concerned, is the position of the apex beat and the lines of absolute dullness. Neusser also lays special stress on the position of the apex beat in determining the heart limit to the left.

A factor of considerable importance in children is the position occupied during the examination, that is the erect or recumbent position. Sahli states that the heart is fairly constant as to its position in the erect or recumbent position in the adult. There does, however, at times, as observed by Cotton, seem to be a difference in the position of the apex beat in the positions mentioned in children.

Special attention has been attracted to the subject of this paper on Prof. Cotton's clinic at Rush Medical College, because of the noted marked variations in the position of the apex beat under normal conditions in children, as observed during the methodical physical examination of same, likewise to the auscultation of the heart in such children and the longitudinal level at which the absolute liver dullness begins. The latter was noted because of its being the index as to the position of the diaphragm which, at times, is responsible for variation in

spinal location, and also with a view to confirm the observations of Sahli, namely, that the liver dullness commences on a level corresponding to that in the adult, that is, in the lower part of fifth interspace or on the sixth rib.

In order to arrive at something definite as to the normal limit of the cardiac area in children above the age of 7 years, or rather the limits which occur in normal children during these ages, for purposes of comparison and to illustrate the points mentioned above, a number of normal cases were selected and carefully examined, the methods of examination employed being those that usually obtain in determining these results.

That we may not tire you with statistics as to the findings in a large number of cases, we will only mention the limits of relative dullness outlining the upper and right borders and the position of the apex beat, the latter being accepted by Kovars, Neusser and others as to the left limit of the heart:

Upper border— Relative dullness, Erect position,	} 2d intercostal space in 42 per cent. of cases. } 2d rib in about 5 per cent. of cases. } 3d rib in 52.6 per cent. of cases. } No variation observed as to the above in recumbent position.
Absolute dullness,	} 3d rib or 3d interspace in 20 per cent. of cases. } 4th rib in 80 per cent. of cases.
Right border taken on a level with 4th interspace, Erect position— relative dullness,	} Sternum and 1 to 1½ fingers breadth to right of right sternal border in 52.6 per cent. of cases. } Sternum in 22 per cent. of cases. } No relative dullness observed in 20 per cent. of cases. } Recumbent position—33 per cent. of cases the relative dullness was less marked.

Absolute dullness—Invariably on the left sternal border.

Apex— Erect position,	} In 5th interspace in 78 per cent. of cases. } Behind 5th rib in 11 per cent. of cases. } In 4th interspace in 10 per cent. of cases.
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Erect position
5th interspace,

Inside mammillary line in 27 per cent.
Inside and extending to or into the
mammillary line in 47 per cent.
Inside and outside the mammillary line
in 26 per cent. of cases.

Those found behind fifth rib or in fourth interspace in erect position were usually inside or in the mammillary line.

In 21 per cent. of the cases the apex in the recumbent position withdrew itself behind fifth rib or into fourth interspace.

Auscultation—

Thirty-one per cent. of cases pulmonary second tone louder than aortic second.

Five per cent. of cases aortic second tone louder than pulmonic second.

Five per cent. of cases both louder than usually found.

Accidental systolic (or so-called hemic) murmurs heard in 31.6 per cent. of cases, 83 per cent. of these heard loudest over the base.

Seventeen per cent. loudest over the apex.

Liver dullness—Lower part of fifth intercostal space and sixth rib in 70 per cent. of cases.

Fifth rib in 30 per cent. of cases.

We concluded that the most frequent position of the apex in children of these ages is in fifth interspace, and that about one-half of these so located is found inside and extending to or into the mammillary line; that about one-fourth of the cases appear entirely within the mammillary line, and that the remaining cases occupy a position to the extent of the breadth of a finger or finger and a half outside the mammillary line. It is further noted that the apex is far less often found in the fourth interspace and behind the fifth rib in the erect position; further, that when the apex is found in the fifth interspace in erect position in about 20 per cent. of the cases, it ascends behind the fifth rib or into the fourth interspace in recumbency.

Gierke examined fifty children at ages varying from 8 days to 13 years, and found the apex beat in the fifth intercostal space in thirty-eight of these; in the sixth in six of them, and in the fourth in two; while in three it was behind the

fourth rib, and in one behind the sixth. In these fifty cases he found the apex in the nipple line in forty-four; in fourteen outside, and in two inside this line.

Sahli gives the results of his observations on eighteen children at ages varying from 9 months to 12 years. In ten of them the apex beat was in the fifth interspace; in five in the fourth, and in the remaining three in both the fourth and fifth.

Steffen gave the normal position of the apex beat as being in the nipple line or slightly external to it.

Rauchfuss, while agreeing generally with Steffen, stated that he had known a good many cases in children, 11 and 13 years of age, in which the apex was 2 cm. external to the nipple line.

Symington states that since the vertical extent of the heart in relation to the anterior chest wall is practically similar in children and adults, it will naturally follow that the transverse diameter of the heart, as compared with that of the chest, is relatively greater in the former (in which the characteristic feature of the thorax is its narrowness from side to side) than in the latter:

According to Sahli, the apex in the healthy adult is located in the fifth interspace, somewhat inside the mammillary line. In children, he asserts, it can extend physiologically (not mentioning in this instance the longitudinal level) beyond the mammillary line. He further states that displacements of the apex to the left, where other causes can be eliminated as producing it, indicates dilatation of the left ventricle.

No less difficult than the accurate calculation of the normal apex beat is frequently the interpretation of the auscultatory signs of the child's heart. As stated, one or two loud tones at the base are not at all uncommon. Then, again, how frequently we hear systolic murmurs over the heart of a child, most frequently loudest over the base, but occasionally loudest over the apex. According to Sahli, the differentiation between accidental (under which we include all murmurs not organic or pericardial) and organic murmurs is possible when all signs, besides murmurs, fail which we value in the special diagnosis of valvular lesions. It is, therefore, not improbable that the liability to error in the diagnosis of heart lesions in children is greater than that in the adult, because:

(1st)—The heart area in an adult is fairly constant.

(2d)—The heart area in children may vary considerably, especially the position of the apex.

(3d)—The basic tones in a child are not infrequently loud, especially the second pulmonic.

Lastly—Because of the occurrence of accidental murmurs more frequently in children.

Leube states that the diagnosis of endocarditis finds itself, in the first place, on the objective findings of the heart. How easy, therefore, to diagnose heart lesions in children presenting the findings mentioned above as occurring in normal children, namely, the apparently displaced apex, where same is compared with the location of the apex in the adult, the loud second pulmonic sound and systolic murmur, especially where reinforced by the existence of a favorable etiological factor, as chorea. That chorea is frequently associated with rheumatism and hence endocarditis is well known, but there are a large proportion of chorea cases in which rheumatism is not traceable, and, on the other hand, rheumatism is by no means always associated with endocarditis. Chorea frequently occurs in anemic children, and in this condition systolic murmurs are a frequent phenomena, likewise a loud pulmonic or pulmonic and aortic tones. It is to be noted that the most frequent valvular lesion made out in these cases is that of mitral insufficiency, which arises not from the fact that that is the most frequently acquired valvular lesion, but that conditions favorable for its diagnosis are most frequently present, as accidental diastolic murmurs are great rarities. According to Kovars, the diagnosis of mitral insufficiency is the most difficult at times of all acquired left heart lesions, and yet how apparently easy where so frequently diagnosed.

We believe that the conditions mentioned, which are inviting to the diagnosis of a mitral lesion, together with our tendency to compare the cardiac area in children with that found in the adult, and the more frequent occurrence of accidental murmurs in children, would explain a great number of the heart lesions diagnosed in chorea and other conditions which may or may not be associated with anemia.

Before closing the paper, we will again revert to the relative dullness outlining the precordial area in children, especially

to the right. In the majority of cases above the sixth or seventh year a relative dullness is observed over the lower part of the sternum, and very frequently to the extent of 1 to $1\frac{1}{2}$ fingers breadth to right of right sternal border. This is the usual finding in normal children of the ages mentioned, and from it can be deduced nothing pathological so far as the right ventricle or pericardium are concerned. Possibly in suspected pericarditis this might be misleading, but the fact that it occurs normally, and that relative dullness is unreliable in accurate heart diagnosis in children, leaves little room for error unless the effusion is small and adhesions between pericardium, pleura and chest wall exist, which can be readily excluded or confirmed by testing the respiratory excursion.

In conclusion, we would call attention to the relatively little value of the relative cardiac dullness in children during these ages and of the supreme importance of the apical location; the variations in the positions of same in normal children during these ages, that it may extend the breadth of a finger to left of nipple line, and the not infrequent occurrence of loud basic tones and accidental murmurs under normal conditions.



TWO CASES OF MULTIPLE CONGENITAL
DEFORMITIES.

By R. ABRAHAMS, M.D.,
District Physician to Mount Sinai Hospital,
New York.

INFANT C was born after a natural labor in the latter part of December, 1898. At delivery the midwife, Mrs. S., discovered several deformities in the new-born, about which she desired to be enlightened. The writer was then sent for.

The baby was found to be plump, lusty, and weighed 9 pounds. On examination the following deformities were noted: Cleft palate—the cleft being to the left of the uvula. The tongue was half the usual size, firmly adherent to the frenum and floor of the mouth. There was no tip to the organ, it rather looked as if it was amputated. It was so firmly fixed to its mooring that it was absolutely immovable; the very slightest vermicular motion was perceptible when the infant lustily cried. The lower jaw was invested with a complete set of teeth, each tooth was perfectly formed and accurately located, but, lacking in enamel, it was soft and flexible. This peculiarity of the teeth might be appropriately called an abnormality.

Each hand had seven digits. The supernumeraries consisted of thumb and little fingers. The former consisted of but one phalanx, endowed with a normal nail and attached to the upper phalanx of its well-formed confrere; the latter, little finger, was well formed, but about a phalanx shorter than its mate. This condition was apparently produced by its shorter phalanges. They were all webbed in the following order: The two little and ring fingers; middle and index fingers; thumbs adherent to each other, as stated above, but separate from the rest. The same arrangement existed in the fingers of both hands.

Club feet. Seven toes to each foot and all webbed. The arrangement and peculiarities of the toes exactly corresponded to those of the fingers, and hence need no further detail.

The penis was very small. With the prepuce on the stretch it measured one-eighth of an inch. The glans was

missing, and there was no palpable evidence of the existence of the corpora spongiosa. The scrotum was in every way normal in size and contents.

Excepting these deformities, the little fellow was very well developed. Notwithstanding the cleft palate and tied tongue, nursing was not interfered with. Both digestion and excretion splendid.

Case II.—For the history of this case I am indebted to Dr. George I. Miller, of this city. The Doctor presented the baby at a recent meeting of the Eastern Medical Society.

Child O.—Female; was born January 10, 1899. Baby weighed at birth $8\frac{1}{2}$ pounds, and was of good figure. The following deformities were observed: A hare-lip on the left side, with a gap measuring $\frac{3}{4}$ of an inch. Absence of left hard and soft palate. Cleft in the right palate, which extended from the corresponding alveolar process backward, 2 inches long and $\frac{1}{4}$ inch wide.

The last phalanges of the index and middle fingers were amputated. The remaining portions of the digits were webbed. A lipoma, the size of a large pea, over the third metacarpal phalangeal joint of the right hand. The last two phalanges of the index and little finger of the left hand were amputated, the remaining fingers were connected by a fleshy cord $2\frac{1}{2}$ inches long and $\frac{1}{4}$ inch thick.

The first, second, and third toes of the right foot were webbed and devoid of nails.

In every other respect the infant was normal, although in hideousness it hardly had an equal.

The mothers of both infants are perfectly healthy, middle-aged, and quite prolific. The families of both are free from deformities and abnormalities.

156 Clinton street.

EDITORIAL COMMENTS

The Progress of Pediatrics in America

On the whole the teachings of pediatrics in the United States will, perhaps, compare favorably with that of any country in the world. Nevertheless we must be humble, and not pride ourselves that we are nearing perfection in that respect. It is well that pediatrics should be taught as a separate branch of study, and, at any rate, on that point we may congratulate ourselves that we are in advance of most nations possessing a far older civilization. On October 10th, Dr. A. Jacobi read before the Section of Medicine, of the College of Physicians of Philadelphia, a paper concerning the study of children's diseases in this country, which should be taken to heart. He said: "As we are now emerging from the stage of childhood in the evolution of medical education, I should know something about that, having been connected with teaching institutions these forty years. We should, perhaps, not expect pediatrics to take a high rank amongst the acknowledged branches of learning in our medical schools. As late as 1859, there were no systematic courses of instruction in our country. . . . The first special clinic, for which a single week's hour was considered all that could be spared, was established in the New York Medical College in 1886. It died with the college in 1895. Since that time similar clinics have been established all over the States, but pediatrics is not yet given a leading part. In most colleges the attendance upon children's clinics is not obligatory this very day. Few professorships exist for pediatrics, and they are mostly nominal. The neglect shown by the official faculties is readily taken by their students as their guidance, and the results are unavoidable." Attention was directed to this "Laisseraller" manner of teaching "pediatrics" in many of the schools of this country in the number of this journal of July

last. It should be clearly understood that in order to gain a complete knowledge of the complaints of childhood, time must be given to the study.

The Ophthalmial Joint Diseases in Children

A large amount of interest has been aroused in England by the recrudescence and seemingly the proving of a theory put forward by Mr. Clement Lucas some few years ago with regard to the cause of a form of joint disease met with in children. In 1888 Mr. Lucas published three cases in support of his views, that the purulent ophthalmia of new-born infants was liable in certain instances to produce inflammations of joints. At that time he made the following statement: "I am not aware that any connection between ophthalmia neonatorum and synovitis has ever been observed or described; but there seems no just reason if, as is generally supposed, the synovitis of gonorrhea is the result of absorption of morbid products from the urethral mucous membrane, why the conjunctival mucous membrane shall not offer an equally favorable absorbing surface. It is scarcely probable that the inflammation of these two joints should be referred to any other cause, and in my own mind there exists no doubt whatever that this is a case of gonorrheal rheumatism consequent upon absorption. In Great Britain little heed was paid to these observations, but on the continent of Europe it was immediately seized upon as the true cause of the ophthalmial joint diseases of children. A paper was read recently by Mr. Lucas before the Royal Medical and Chirurgical Society in which clinical proofs furnished in over twenty cases by European surgeons were produced in support of Mr. Lucas's original contention. Further than this, however, clinical observations have been substantiated by bacteriological investigations. In 1889 Darier isolated the gonococcus of Neisser in the secretion from the conjunctiva, and Deutschmann in the following year, fully proved the point by aspirating the knee of an infant suffering from puru-

lent ophthalmia and found the gonococcus in the secretion taken from the joint. Mr. Lucas thinks that when suppuration takes place another microbe may be associated with the gonococcus, for in two cases in which suppuration occurred, in one the streptococcus was found and in the other staphylococcus, in both instances the gonococcus being present.

Large Families

The declining birth rate has been for a considerable time a fruitful theme for discussion in most of the countries of the civilized world. It is well known that the birth rate in France has been for many years decreasing to such an extent that the population is gradually but surely dwindling. Among native-born Americans the birth rate is small and latterly it has been shown that in Great Britain the increase in births over deaths is not really so large as formerly. In the good old times this was not so, then large families were regarded as a matter of pride. Dr. C. A. Windle, Professor of Anatomy in Mason University College, Birmingham, England, writes in the *Medical Magazine* for January pleasantly though somewhat discursively on this prolific subject. He proves by the aid of the Elizabethan or Jacobean tombs that in the days of yore children abounded, and that large families were the rule and not the exception. But the most interesting part of his article is that which relates first to the multiple births. He quotes the following instance, taken from the *Gazette Medicale de Lyon* for 1863, where the wife of a medical man at Fuentemajor, in Spain, who at the time mentioned was 43 years of age, had thirteen times consecutively presented her husband with triplets, the last two having been girls. Dr. Wendle then says: "What is the greatest number of children ever known to have been born at one time. Four, five, or even six have been observed, but the crowning instance, as might perhaps be expected, comes from America, where nature conducts her operations on a greater

scale than in this worn out hemisphere. The case is recorded by a medical journal from which it was quoted in the *Medical Times*. The woman in this case, who had twice been the mother of twins, broke the record by being delivered on the next occasion of eight at a birth. We have no wish to throw cold water on this account as we are glad to see America lead in everything, but it would be interesting to learn the name of the journal in which this extraordinary case was first published so as to get further particulars.

In the issue of PEDIATRICS for January 1st was an article on pneumonia, in which reference was made to the great partiality evinced by many physicians in Great Britain for belladonna in the therapeutical treatment of this disease. Since that article was written, Dr. J. A. Coutts, Physician to the East London Hospital at Shadwell, a well-known authority on the diseases of children, has contributed a paper to the *British Medical Journal* of January 28th, highly extolling the merits of the above mentioned drug in cases of infantile broncho-pneumonia. Dr. Coutts, after stating that he adheres to the prevalent opinion that there is an essential difference between croupous pneumonia and broncho-pneumonia in children, goes on to say that in just as much as the forms of the disease are distinct, so also does the treatment indicated. In order to show his strong belief in the beneficial properties of belladonna as a therapeutic agent in broncho-pneumonia of infants, we will quote his own words regarding its efficacy. He says: "With it, as the sole drug administered, there has been in my cases no need for steam tents, oxygen inhalations, unlimited stimulations, and all the rest of the former varied and trying treatment." This is strong testimony, and as Dr. Coutts avers that the use of belladonna has greatly decreased the rate of mortality from

broncho-pneumonia in -children at the Shadwell Hospital, his championship of belladonna would seem to be justified. Dr. James Carmichael, of Edinburgh, who, although scarcely so vehement in his eulogy of the curative effects of belladonna in the pneumonias of infants, says: "The use of belladonna in certain cases of acute respiratory affections of children is one of the most striking therapeutic facts I know. The cases in which it is indicated are those particularly of infants attacked with acute congestive bronchial catarrh in the early stages. If belladonna truly be so useful, how is it that it has been altogether overlooked in this country. At the discussion on the treatment of infantile pneumonia at the New York Academy of Medicine on November 26th last, although many drugs were referred to as being of slight use in certain phases of this disease, not a word was said as to belladonna. However, until convincing proof is produced in favor of belladonna as a specific in infantile broncho-pneumonia, we shall continue to adhere to the treatment in general use here, and would say, in the words of Dr. Floyd Crandall, "drugs afford a very slender reed upon which to lean in the management of pneumonia." Be it understood that this is without prejudice. It should be said that the novelty in Dr. Coult's administration of belladonna is that he gives it in considerably larger doses than is generally the case.

**A New and Original System
of Bringing Up Children**

In the *Sanitarian* for February, is an article, copied from the *Monist*, which is both instructive and amusing. It is instructive, because it professes to solve a problem that has been a source of infinite anxiety and vexation of spirit to fathers and mothers since the world began, and is amusing because it is totally opposed to our preconceived notions on the subject. The article in question is entitled, "A Few Hints on the Treatment of Children," and is written by Dr. Paul Carus. As men-

tioned before, the article given is quite original. For instance, the opening sentences are as follows: "If you have a child whom you want to perform a certain act on its own account, but not at your request, you need only tell him, 'Do not do it,' and he will be sure to do it. Hence the lesson: don't say 'don't' to your children; do not forbid. If you do not want the baby to walk down stairs because he will hurt himself, and is liable to fall, let him try, and let him by his own experience find that he runs risk in going down." Of course, experience is an excellent teacher, no better, but we imagine that most mothers will hesitate, before attempting so heroic a mode of teaching a baby experience. Solomon's well worn precept, "Spare the rod and spoil the child," does not, by any means, fit in with the author's ideas, whose opinions on the matter are as follows: "You must make them, so far as possible, feel the evil results of their actions, and the insight into the causation of good and evil will exercise a better and more educational influence than the fear of the rod or the sting of bitter reproaches. The child will be an echo of your behavior. . . . Direct and divert, but do not suppress. Deal with children as you would with insane persons." With regard to punishment of bad children, although we believe that many parents punish injudiciously, and thus do more harm than good, yet we cannot but think that a little wholesome castigation at times will effect its purpose. Still there is much to ponder over in Dr. Carus' remarks, and the article is well worth a study.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, January 10, 1898.

The President, Dr. F. A. PACKARD in the Chair.

Dr. F. A. PACKARD reported a case of multiple sarcoma in a boy of 4 years. (See page 241).

DISCUSSION.

Dr. J. P. CROZER GRIFFITH.—The thing that struck me in Dr. Packard's patient was the great anemia. It recalls to my mind a case some seven years ago. The patient was a youth. There was decided fever, and the anemia was so marked that the case was supposed to be an instance of pernicious anemia. It came to autopsy, and there was found widespread internal sarcoma.

It would be very interesting to know what the action of the hypodermic injections would have been in the case of the child reported this evening. I saw him quite frequently in the Children's Hospital, and I was quite anxious to know whether any good would come from the treatment proposed.

Dr. EDSALL.—I wish to ask whether there was any record of the presence or absence of albumoses in the urine. In a considerable number of rather obscure widespread sarcomas of the skeleton, albumoses have been found in the urine, and their presence in such cases has a certain degree of diagnostic importance. I have seen no record of the discovery of albumoses in other tumors than those of bones, and think it is important to learn whether they are the result of sarcoma of bones only, or may be found in association with any generalized sarcomatous growth.

Dr. F. A. PACKARD.—I regret that an examination for albumoses was not made. I was ignorant of the fact that they had been found in such cases, otherwise I would have made it.

My own regret in the failure of this boy to be brought back for treatment by Coley's fluid is very great. It was such a perfectly hopeless case with any other means of treatment,

that, in spite of the fact that in certain quarters discredit is being thrown on the Coley treatment, since cases have been seen to improve very much and in many instances to be entirely cured, I wished to use it. Unfortunately for us, as we were negotiating for some of the fluid, the parents of the child took him away, and failed to return him.

ADDRESS OF THE RETIRING PRESIDENT.

By FREDERICK A. PACKARD, M.D.

According to the By-Laws of the Society, one of the duties of the President is to deliver an address at the Annual Meeting, in which address he is expected to review the condition and transactions of the Society during the past year. Doubtless the intended purpose of such an address is to encourage the Society by showing the amount of work accomplished, and to indicate means by which the aims of the Society might be better accomplished.

When the formation of this Society was under consideration a little more than two years ago, the question naturally first discussed was the existence of a need in Philadelphia of a special association for the study of pediatrics. At the present time there is so much specialization of scientific, as of other work, that there is decided danger of our too closely approximating the condition of various mechanical trades, wherein subdivision of work has produced exceedingly fine results in execution, but has also increased the danger of impeding progress by removing the ability of men to take broad views, and apply general mechanical laws to the advancement of invention. The all-around mechanic of the olden time is disappearing, and, it would seem, not without leaving a place difficult to fill. In medicine the same forces are at work, the minute attention to sub-divisions producing more accurate results, but, it is to be feared, with some loss of appreciation of the broader views that can only be acquired by less exclusive attention to too minute details. The old system of apprenticing in the mechanical arts produced less minutely exact, but more broad-minded workers than will be found in the near future. The mushroom specialist, without previous experience in general work closely resembles the mechanic who can make a screw with the most mathematical exactness, but is

without knowledge of other mechanical work, or of the machine of which the screw forms a part. That specialism has advanced our knowledge of the processes of health and disease is a proven fact, but the minute knowledge gained by painstaking investigation on the part of special workers in limited fields would be of little value, unless there still existed workers in broader fields, who could gather together the results of the various special workers and fit them together.

Now it has been claimed that pediatrics is not a proper specialty. This is only partly true, as it cannot be denied that the successful treatment of children certainly requires special study—study that is not acquired by ordinary medical reading, and that is necessarily neglected by undergraduates of those teaching institutions wherein no provision is made for instruction in this division of general medicine by one who has devoted his time and ability to the study of disease as it occurs in infancy and childhood. I venture to assert that were most consultants of large renown in the field of general medicine to be asked to decide upon the proper constitution of a milk-mixture for an infant with enfeebled digestion, they would be as apt to make the proteids 6.50, as to hit upon the due proportion of carbohydrate. It is necessary, therefore, that some with large experience should keep in touch with advancing knowledge in pediatrics. To this extent, at least, is pediatrics a specialty. Again, we have to remember that the physical signs in childhood offer some peculiarities that are apt to be overlooked, or misinterpreted by one who is entirely occupied with the diseases of adults. I would merely mention in this connection the frequent occurrence of a typical cracked-pot sound, upon percussing the chest of a crying child, and of a square dull patch at the base of the left lung, posteriorly, which simulates a localized pleural effusion, and Ewart's sign of pericardial effusion.

The object of all medical societies is, or should be, the offering of opportunity to compare experiences, to discuss moot questions, and to keep members in touch with each other's work. In societies which might be called general in character, one naturally hesitates to read a paper that would interest but a small portion of the members present, and discussion upon papers is not so full as is the case where all of those present are interested more directly in the same subject.

In treating children we find constantly that, partly owing to the marked influence of reflex disturbances, some knowledge of all the specialties is a decided advantage, even some idea of obstetrics being of value from the influence of the processes of normal and abnormal childbirth upon the health of the child. I would, in this connection, especially mention the occurrence of birth-palsies, of atelectasis, and of congenital heart disease. This, therefore, renders the ground covered by pediatric study a very broad one, so that the society has within the past year listened, with interest and profit, to articles especially concerning the fields of surgery, ophthalmology and orthopædics, in addition to those relating to medicine proper.

That pediatrics is a study of sufficient interest to warrant the formation of what the newspaper reporters would delight to speak of as a "local" society for its study and discussion is shown by the continued interest taken in our society by the members, which has continued through its second year. And by this sentence, I am reminded of my duty, according to the By-Laws, a duty that I have so far neglected, in being tempted to branch out into a defence of our existence.

During the past year nine meetings have been held; the average attendance has been a little more than 38 members, the smallest being 28, the largest 67. We have heard 25 papers, including Dr. Northrup's interesting and suggestive paper, read at the April meeting. An important part of our meetings has been the exhibition of patients, of which we have had presented 13, a number that could be increased with advantage. Our membership at present is 258. During the past year we have lost by death 2, by resignation 3 members, while to offset these, 22 new members have been elected. What, to my mind, is an eminently proper function for the Society to perform, comes before you for the second time tonight. I refer to the appointment by the Society of a commission whose duty it shall be to endeavor to secure a better milk-supply for infant-feeding. No one interested in philanthropy, in public hygiene, or in pediatrics, can fail to appreciate the immense advantage that would accrue from such an improvement in our milk supply as may, theoretically, at least, be obtainable by such a commission. If this Society can be instrumental in pushing it through to completion, we shall have been created by no means in vain.

From the brief statistics regarding our year's work, it will be seen that our Society has safely passed through its "second summer," is in quite lusty condition, and, I hope and think, with steady gain in weight. My serious endeavor to find some suggestions to offer for our future work has been fruitless. In conclusion, I desire to again thank the Society for the honor they have conferred upon me in electing me to their highest office, and to state that my gratification has not been diminished after looking "the gift horse in the mouth."



PRACTICAL NOTES

Calculus in Children.—There are three symptoms which, when observed in the same case in childhood, point almost exclusively to the existence of calculus: a long prepuce, pain on urination, the passage of blood, particularly at the close of urination. The long prepuce is caused by the constant traction the child makes on the prepuce to relieve the pain, which it no doubt refers to the end of the penis, as in the adult. The exquisite pain, far more severe than in the adult, is the result of the driving of the calculus by the expulsive efforts of the bladder against the sensitive vesical neck. In this way also is caused the bleeding.—BRISTOW, *Medical Record*.

Follicular Tonsillitis:—

R	Trichloracetic acid	gr. iss.
	Sodium	gr. iiiss.
	Iodide of potassium	gr. viiss.
	Glycerin	℥ iss.
	Distilled water	℥ iiss.

M. S.—After incising paint with the above.

—*Gazetta degli Ospedali e delle Cliniche, Medical Record*.

Follicular Tonsillitis of the New-Born was described in 1892 by Dr. JULIUS EROESS. The number of cases observed by him at this age were twenty-two. In two of these the disease was discovered at the end of the first day of life, in two on the second day, and in the greater number of cases (nine) it was observed on the third day, in each of four cases on the fourth and fifth day, and in one case on the sixth day. During the first few days of life all the mucous membranes, as well as the tonsils, are tender.

The disease is superficial and does not penetrate deeply into the parenchyma. Either one or both tonsils are slightly reddened, injected, and moderately indurated. The local symptoms are much milder and more circumscribed than in older children. The exudate is of the size of a pin-head, rarely as large as a lentil. It is at first slightly raised, white as snow,

later more flattened, and of a yellowish color. One tonsil frequently presents five to six of these points. The plaques do not become confluent. After a period of one to three days this exudate peels off and the mucous membrane beneath it looks pale. Obstruction to deglutition and breathing is not present. Increase in temperature was observed only in one-half of the cases, reaching 38° to 90° C for about one to one and a half days. The white deposits of thin fibrin filaments, epithelial cells, detritus, and a few leucocytes. In these cases the palato-glossus area of the diseased side was also reddened, injected, swollen, and presented white plaques of exudation in its vicinity. In a number of cases the author observed a similar inflammatory process of the soft palate and the palatine arches, not accompanied, however, by any affection of the tonsils. Bednar's epithelial pearls and sprue are to be distinguished from this disease.—*Orvosi hetilap*.

Stomatitis Due to Milk.—P. RITTER (*Dentist, Berlin*), reports two cases which were unusually hard to cure. The first was that of a child 1¼ years old, who had been under treatment for three weeks. Milk had been prohibited (the mother's attention had been attracted by the "large quantities" of milk which the child drank). The lower jaw presented a necrosis of the gum, and a few teeth were loosened. Painting the gum with undiluted tincture of iodine and carefully cleansing it with a solution of permanganate of potash cured the affection, although two of the loosened teeth had to be removed. The second case was that of a girl 25 years of age, who had been ordered a milk cure. A week after taking raw milk the gums began to swell, and eight days later fever came on. In spite of the application of a solution of alum, the affection invaded the throat, and chills occurred. The whole mouth was covered with an aphthous deposit, and particularly, the region of the lower wisdom teeth bulged out and was covered with grey plaques. Painting the parts with undiluted tincture of iodine conjoined with a mouth-wash, consisting of acetate of alum, did very well. The patient claimed to be free from pain on the next day, and was able on the third day to take food without inconvenience.—*Allg. Med. Centralzt.*

A Case of Strangulated Hernia in an Infant Five

Months Old.—ARCH. HUFT reported a case of congenital inguinal hernia which suddenly became enlarged from the pressure produced by a severe cough and could not be again returned by the mother. Constipation and chronic vomiting of non-feculent material came on. Taxis, although performed under anesthesia and with raised legs, was employed without success. An operation was then undertaken. A very narrow strangulation presented at the neck of the hernia, and great discoloration of numerous loops of the small intestine. Reposition of the gut was effected. A radical operation was proceeded with and proved successful. During the operation the child should be, above all, protected against cold as much as possible by leaving bare only the field of operation. All neighboring parts should be, as well as possible, warmly covered.—*Brit. Med. Jour.*

A Roentgen Photograph of Chronic Hydrocephalus in Hereditary Syphilis is described by HELLER. The child mentioned was delivered by him with forceps in 1890, and at the time of birth presented a perfectly normal skull, but developed a syphilitic eruption some months later. Antisyphilitic treatment led to recovery.

In January of the following year he again saw the child, when it presented all the symptoms of chronic hydrocephalus. Under treatment with potassium iodide and other antisyphilitic remedies a cure was obtained. For seven years he observed this case. Signs of rachitis have never appeared, and the child is mentally well developed.

In the beginning of the year an interstitial keratitis made its appearance in both eyes of the boy, remains of which could still be noticed in the Autumn of the year. Then, however, two changes in the bones occurred, a periosteal gumma in the left tibia and a tumor of the left humerus. Under antisyphilitic treatment the gumma disappeared after a few months. The transillumination with the Roentgen rays, which was undertaken at a time when the gumma was at its height, furnished a very exact photograph of the tumors, a dark deposit is seen on the humerus, to the extent of 5 to 6 cm. (2 to $2\frac{3}{4}$ inches) which is undoubtedly an expression of the dissolved lime salts that occurred on the border of the periosteum and the bone.

This picture is a proof that a grave form of syphilis was present in this case.—*Vortrag im Verein f. inner Med. zu Berlin.*

A Case of Staphylococcus Infection of the Blood and of the Cerebro-spinal Fluid in a child 6 months old is interesting because of the absence of pyemia. After the affection had been cured, within two and a half months, by asepsis and antisepsis of the integument and by hygienic measures, the child was taken with measles two weeks later, and died of a broncho-pneumonia. The autopsy was negative as to any lesion bearing on the primary disease. The source of infection is hard to trace. Affections of the digestive or respiratory tract as a source of the disease seem to be absolutely excluded, as well as skin affections, because there were not present the slightest symptoms of the former in the beginning of the disease. If we admit, however, that an exogenic infection be sufficient to cause superficial suppuration of the integument, as for example, furuncles and pustules, the hematogenic source may perhaps be found in the deep abscesses of the lumbar region and of the hairy portion of skin, which gradually made their appearance coincidentally with the height of the general infection.—*Gaz. hebdomadaire de médecine et de chirurgie*, 1898.

The Treatment of Measles.—STRISOWER (*Klin. Therap. Wochenschr.*). The author had good results in the treatment of measles with ichthyol ointment. He orders the patient to be anointed from head to foot, mornings and evenings, with a salve composed of ichthyol, 30 g. Axungia 90 g. If this treatment is begun in the commencement of the disease, when the exanthem is still confined to the pharyngeal mucous membrane, it is possible to obtain a perfectly abortive course. There will be present no skin eruption or fever, and the children rapidly convalesce. If the ichthyol ointment is first used at the time when the eruption has already occurred, we will observe that the temperature declines and the exanthem rapidly disappears after one or two inunctions. After four or five days a perfect cure is always obtained, when the patient is ordered a warm bath to remove the ointment from the body.

ABSTRACTS

RECOVERY IN A CASE OF STRICTURE OF THE ESOPHAGUS FOLLOWING DIPHTHERIA.

ROSENHEIM (*Berlin Klin. Wochenschr.*, 1898, xxxv., 496) presented a boy, 5 years of age, to the Berliner Medic Gesellschaft (11, 5, 1898), who had come under his observation three weeks previously.

The patient had been a healthy child up to his third year, when he passed through an attack of scarlet fever accompanied with severe diphtheria. When convalescing he complained of difficulty in swallowing, which increased by degrees; various attempts for relieving him were made, the stricture, however, became impermeable, so that Schuchard (Stettin) was at last compelled to perform gastrotomy to save the life of the child.

Further attempts were then made to pass a sound by way of the fistulous opening, but never successfully; a sound could never be made to pass, although some fluid slowly found its way through the stricture. The child was then mainly nourished through the fistula.

In this condition the patient fell into the hands of Rosenheim; a paralysis was excluded; a stricture was demonstrated 22 cm. distant from the teeth, through which even the finest sound could not be made to pass. Rosenheim then practiced the least harmful method of *Socin*, he had the patient swallow small balls of silver, which were attached to a silken thread. Even the very smallest of these remained above the stricture. Rosenheim then determined to use the esophascope, and eventually to practice forcible dilatation. This, however, presented extraordinary difficulties. As soon as the instrument was introduced respiration began to cease, and the attempt had to be discontinued (this was always practiced under chloroform narcosis). There was nothing left to do but to hold the boy firmly during esophagoscopy, which necessitated the assistance of four persons; the patient resisted furiously, attempted to bite, respiration became panting, and whenever the instrument had been in position one to two minutes respiration ceased, so that it had to be at once removed. Notwithstanding all this, Rosenheim finally gained his point.

The appearance of the stricture was essentially different from that usually met with in benign strictures. There was no vestige of cicatricial tissue, of grey discoloration, or of any prominence; there was only present a funnel-shaped depression, and the entrance to the stricture could not at first be recognized, for the reason that it was covered by a fold of mucous membrane which strongly bulged outward from the anterior wall. After Rosenheim had lifted this up he was able to recognize the minute opening, a fissure $\frac{1}{2}$ mm. in size, running in an oblique direction, not situated centrally but somewhat to the right. After much exertion he succeeded in passing a fine steel spiral sound through the stricture and down into the stomach. Rosenheim intended to grasp this sound through the fistula, to

fasten a thread to it, and then with the help of the latter to pass in a drainage tube (v, Hacker), a procedure which is usually successful in these cases and occasionally renders rapid dilatation possible.

In the present instance, however, this did not succeed; the fistula was of an unusual length (12 cm.) it was impossible to turn the corner with the sound, though every variety of hooks and pincers were used. On the following day Rosenheim proceeded to try another method (Epstein-Senator). He introduced a laminaria tent, using his normal sight, into the stricture with the help of a pair of forceps, introducing at first an exceedingly small one, which was only accomplished with the greatest difficulty. The tent was allowed to remain *in situ* for eight hours, having been pressed home from above. During this time it increased to twice its volume, and after it had been removed the patient was able again, for the first time, to readily swallow fluids and paps. After eight days a larger tent was introduced; this was allowed to remain *in situ* twenty-four hours and still further enlarged the stricture. Now, the patient was also able to take solid food, and it is the opinion of Rosenheim, that the gastric fistula will now hardly be necessary.

Further treatment is being carried on in the most careful manner with Schreiber's hydraulic sounds, which are adapted to this form of soft stricture; the tube is filled with water and a certain amount of more water is forced into it, when a small balloon will appear at the distal side of the stricture, and this balloon is now gradually pulled through the stricture; if the latter is yielding, we may obtain surprising results.

The boy is able today to eat all kinds of food, and Rosenheim intends to close the fistula after having once more dilated the stricture (after eight to fourteen days).

DUODENAL ULCERS IN CHILDREN.

SIMMONDS (*Munch. Med. Wochenschr.*, 1898, *xlv.*, 435) discussed this affection in the Biolog. Abtheil. des Aerztlichen Vereins in Hamburg (22, 9, 1898). He pointed out, in the first instance, the rarity of duodenal ulcers in childhood, and then presented two specimens.

1.—Boy, 8 years old, died of nephritis following pneumonia. The duodenum presented numerous shallow ulcers of the size of a pea. Microscopical examination revealed on the base of the ulcer, which in one place reached below the serous coat, small-celled infiltrations and numberless microbes.

Simmonds did not wish to decide the question, whether we were dealing here with a mycotic ulceration.

2.—A girl, 4 years of age, died eleven days after a burn of the thorax. The duodenum contained a number of small ulcers and one deep one of the size of a 10-penny piece, which had laid bare the pancreas and had given rise by erosion of small vessels to a great hemorrhage. The microscope revealed numerous small vessels at the border of the ulcer filled with hyaline thrombi.

The ulceration was caused by the occlusion of vessels and by the digestion of the tissue, which had been deprived of its blood. Duodenal ulcers following burns are not frequently met with, according to Simmonds, who only found them present in two cases out of fifty.

Discussion.—Fraenkel presented the stomach of a 5-year-old child who had died from burns. The ulcerations were pretty evenly distributed in a lineal direction of the size of a pins head, but were certainly not to be attributed to the burn; the child had vomited very freely and this fact should be taken into account. If the first case reported by Simmonds had not died of pneumonia, but from burns, we might be tempted to see some connection between the ulcers and the latter fact. The ulcer in Simmonds' second case is certainly much older than ten days, otherwise its base and the margins of the ulcer could not have cleared up in such a manner. As the first preparation shows that these ulcerations may also be present in children in other diseases, Fraenkel deems a connection of the ulceration with the burn, in the second case, as problematical. He also believes that intestinal ulcers are very rare in burns. Simmonds, on first sight, had also believed that this ulcer was an old one, and that the ulcer and a burn were only present together by chance, but the microscope has shown that we are dealing here with a recent ulceration, which only occurred after the burn.

THE TREATMENT OF CHRONIC CONSTIPATION IN CHILDHOOD.

FRIEDMANN (*Der Kinderarzt*, 1898, ix., 193): Chronic constipation in childhood, even more than that of the adult, demands rational and prompt treatment.

The treatment must be adapted to the etiology. This treatment may be divided into two groups, which, although occasionally merging into each other, are, on the whole, with certainty separated. One cause of constipation—and here the suckling period and early infancy to the end of about the second year of life is especially considered—is improper feeding. Children who are brought up on food which has been too much diluted, or who do not receive a sufficient quantity, may be affected; much more frequently, however, are those who are being fed by the anxious mother or nurse with a quantity of food much in excess of their needs. These children are not only compelled to absorb the badly digesting casein of cow's milk, they are besides plied with all forms of flour food and paps, which the weak intestine of the infant is unable to manage, and often sooner or later gives up the struggle.

Quite a percentage of these children suffer most at the critical time of weaning. In these cases also the child is usually overfed. The intestinal canal of the baby is not only expected to digest an amount of food which would frequently give an adult distress, but they are also deprived of pauses for the purpose of digestion and assimilation. Here constipation, besides many other disturbances, will soon play a prominent rôle.

The treatment of this form of constipation can be learned from the

history of its cause. Regulation of the diet according to the child's age will in most cases constitute a sure and lasting cure. Only in individual cases, and temporarily, will treatment have to be instituted with clysmata, suppositories and mild laxatives. An earnest warning should here be presented against the habit which many doctors have contracted of placing the greatest importance on the administration of purgatives. This treatment, although efficacious for a time, can never procure lasting results; on the contrary, the intestine becomes more and more weakened and inelastic, and the constipation will return stubbornly again and again.

Numerous authors, and only recently Cattaneo, of Heubner's clinic, have directed attention to the good results of abdominal massage in the constipation of children. Cattaneo mentions a series of cases, the great majority being infants at the breast, in which, besides regulating the diet, massage was employed by himself or the parents, and in many instances the anticipated result was obtained in a few days. Much as Friedmann values the practice of abdominal massage for older children, he cannot bring himself to believe that it will ever be used extensively for children at the breast. To permanently change a chronically diseased organ, not only days but weeks and months are necessary, and the treatment cannot be trusted to the hands of the layman, but should be practiced by trained physicians, who alone possess the necessary delicacy, care, and mechanical skill. Abdominal massage of the adult being at any time a difficult proceeding, how much more so must it be in the infant, who, even where carefully handled, is apt, through screaming, to make tense the abdominal muscles to such a degree that they become as hard as a board to the touch, and quickly put an end to further manipulation. The rapid improvement which took place in the cases of Cattaneo is a proof that the former was due rather to the regulation of diet than to the massage, and his statistics still further convinces Friedmann that infantile constipation is to be treated rather by a regulation of the diet.

The second group of constipation in children embraces those cases in which the affection can be traced to insufficient action of the intestinal canal. The infantile period of life may be considered excluded here. As a rule, we have to deal with children in whom, on account of rhachitis, anemia, general nervous prostration, and similar atrophic conditions, the muscular tissue and innervation of the intestinal wall has been affected, so that the peristalsis is not sufficiently vigorous to force the contents of the intestine down and out. The slighter forms of this group we will also be able to cure occasionally, ordering the meals to be eaten at certain times, separated by long intervals to rest the stomach, and by the consumption of fruits, honey, spice cakes and vegetables, which have a tendency to facilitate its passage along the intestinal canal. In severe cases, however, especially where the constitutional anomalies above mentioned are at the bottom of the complaint, abdominal massage, accompanied by active and passive curative gymnastics, is indicated, together with the causal treatment. Where we are satisfied, however, to leave this in the hands of the laymen and promise a cure within a few days, we will not be able to gain any satisfactory results.

Massage always should be left in the doctor's hands, and the friends of the patient must be instructed that a lasting cure can only be expected after treatment has been continued at least for six weeks. If these conditions are not complied with, it is far better not to begin the treatment at all, for we shall not attain any other results than the discrediting of abdominal massage as a curative measure. It is only within the period mentioned that the operator is able to stimulate the functions of the nervous and muscular elements of the intestine in such a manner that its impression becomes lasting, and that an occasional overloading will be naturally overcome.

EXTRA AND INTRAPERITONEAL INJURY TO THE BLADDER FROM IMPALING. OPERATION. CURE.

A. ALSBERG (*Münch. Med. Wochenschr.*, 1898, *xlvi.*, 79): A boy, 9 years of age, was admitted to the israelit. Krankenhaus at Hamburg, August 21, 1896, suffering with symptoms of abdominal injury. The history was as follows: On the preceding day, three o'clock P.M., the boy was sitting on an iron rail which surrounded a cellar stairs, and occupied himself by tracing the picture of a comrade on the wall with a piece of chalk. There had been some rain, the railing was slippery, the boy lost his foothold, and was impaled on one of the iron rails. The railing consisted of the common cylindrical iron rods, nearly 2 cm. in circumference, whose tip ended in a conical point, which was, however, not altogether pointed, but somewhat dulled at the apex. The rods reached about 18 cm. above the upper cross-piece. The boy's screams brought the neighbors running, who were only able with great difficulty to lift the boy from the railing.

A physician discovered a wound of the soft parts at the inner side of the right thigh, which was bandaged by him lege artis. During the afternoon the patient experienced frequently a desire to micturate, but was unable to pass any urine; towards evening fever and vomiting came on; the patient at the same time complaining greatly of abdominal pain. During the night he was very restless, toward morning he voided a large quantity of reddish-tinted urine. On the following morning the patient's condition had become so much worse that the attending physician recommended his transfer to the hospital. On admittance the boy seemed collapsed, the eyes were sunken, the color of the face gray, respiration superficial, very much accelerated, pulse 140, small, temperature 38°.

The inner surface of the right thigh presented a long transverse wound, about 10 cm., below the inguinal fold, and a sound introduced found its way without any difficulty upward, much above Poupart's ligament. The abdomen is greatly distended and tender to pressure over its whole extent, above the right Poupart's ligament increased resistance is distinctly felt. Above Poupart's ligament and in both groins there is present a broad zone of dullness, which does not disappear from above the

right Poupart ligament on changing the patient's position, although doing so from the other parts; at this time distinct fluctuation. From these findings, an extra and intraperitoneal injury of the bladder was diagnosed, and the operation performed twenty-five hours after the accident.

Chloroform narcosis, position with the pelvis raised. A catheter introduced into the bladder removed a small portion of clear urine; on inserting the catheter more deeply, more urine suddenly appeared, which was, however, very turbid. A large incision was made on the right side, immediately above Poupart's ligament and parallel to the latter. The abdominal wall was incised along the whole extent of the wound, and the right rectus muscle in greater part dissected off from the symphysis pubis. The intraperitoneal tissue is largely suffused with blood. We now discover that the iron rod has penetrated the right horizontal ramus of the pubic bone, the latter presents an oblique fissure, whose edges are dark. On penetrating further into the intraperitoneal tissue, which is found to be permeated by urine, there is found on the right side of the anterior wall of the bladder an irregular, contused, perforating wound with blackened edges. A catheter was now introduced into the bladder, and it was an easy matter to reach the peritoneal cavity by way of the second wound of the bladder, from which a large quantity of turbid urine was removed.

Now, an abdominal incision was made in the linea alba, extending from the symphysis to the umbilicus. When the peritoneal cavity had been opened, large quantities of turbid urine were evacuated, the parietal and visceral peritoneum is found to be reddened and in many places covered with layers of fibrin, the intestines are greatly distended. The fluid was removed as well as could be with sterilized compresses, and there were found in many places between the intestines and in the small pelvis large clots of glassy-looking, swollen fibrin. The posterior wall of the bladder immediately next to the median line presented a roundish wound, having irregular edges, which permitted the tip of the index finger to enter above. The wound was closed with button sutures passing through the serous and muscular coats, and a continuous serosa suture added. Next a large rubber drainage tube filled with iodoform wicking was placed in the most dependent angle of the wound, and the wound of the integument closed by a suture. The wound above Poupart's ligament was loosely packed with iodoform gauze, after a drainage tube had been passed into the bladder and fastened by a suture. A permanent catheter was introduced into the bladder through the urethra and fastened to the penis with adhesive plaster. The pulse was 168 at the end of the operation.

The further course was a very favorable one. The patient remained restless and somewhat confused until the following evening, from the third day on, however, he was perfectly bright. The temperature only slightly exceeded 38° on the second day, after this it remained perfectly normal; the pulse was already quite strong on the second day, 90. The drainage tube was removed from the peritoneal cavity on the following evening, that from the bladder one day later. The permanent catheter was removed after the sixth day. The patient was then able

to void part of his urine per vias naturales. Eighteen days after the operation the patient was able to get up, after the twentieth day all the urine found its way through the natural passages. After six more days the patient was allowed to go home, the wound having healed up to a narrow aperture.

THE DISTURBANCES OF MICTURITION IN CHILDREN AND THEIR TREATMENT.

R. KUTTNER (*Berlin. klin. Wochenschr.*, 1898, xxxv., 422). observed two cases which, although unique in their way in the class of disturbances of micturition in children, are nevertheless interesting to the general practitioner, for the reason that where they occur less distinctly marked they may easily lead to mistakes in diagnosis, and hence to wrong therapeutic measures.

A year and a half ago Kuttner had under treatment a boy who for a couple of months had retained a stone in the urethra. The patient complained of frequent desire to urinate, suffered intense pain on micturition, the obstruction to the outflow of the urine being considerable. A cure was obtained without a bloody operation, by crushing and extraction, the very same symptoms nearly were complained of in the first case mentioned, a boy who had been under Kuttner's care for four months. This case, it is true, had in addition complete temporary anuria, and this at an early age.

The boy, who is at present 8 years of age, had a first attack of anuria at six months (of thirteen hours duration); after the bladder had been emptied by means of a catheter, he was again perfectly well. This case suffered from complete anuria at the ages of $2\frac{1}{2}$, 3, 4, 5 years, lasting sixteen, twenty, twenty-four and fifty-two hours, micturition in the intervals being perfectly normal. Only since November, 1896, there have appeared continuous disturbances, at first mainly in the morning, when the patient is able to empty his bladder only with strong pressure and violent pain; during the day the flow is easier.

Hot baths were taken for a number of weeks, the affection being looked on as a nervous one, without any benefit. Since the middle of July his condition grew markedly worse; micturition became exceedingly difficult and painful at every evacuation, and finally became so bad that the patient was unable to stand during the act, but had to be held, at the same time trembling greatly in his lower limbs. Evacuation was always only partial, the patient was only able, in spite of all pressure exerted, to pass a drop at a time, micturition became more and more frequent (at last every hour and more often), and he suffered unbearable pain. The abdominal parietes were found somewhat full in the region of the bladder, so that Kuttner suspected a distended bladder.

On instrumental examination a narrowing was discovered which only permitted the passage of Charrié No. 8 with great difficulty. A stone or any other foreign body could be excluded. The passage of a catheter of this size and the evacuation of a considerable quantity of urine corroborated the diagnosis of distension of the bladder, and Kuttner thought of a

"congenital stricture." As he was able, however, during dilatation, which was practiced to enlarge the supposed stricture, gradually to reach the size of No. 14 of Charriè instrument (which could never have been accomplished in a congenital structure) he now took for granted that he was dealing with a case of chronic (reflectory) spasm of the external sphincter vesicæ externus. The patient was perfectly cured by gradual dilatation, by the introduction for a long time of gradually increasing sizes of metallic sounds, and now, two months after dismissal, not the slightest difficulty is experienced.

The second case is a girl, now 7 years of age, who voided her urine involuntarily ever since birth. As long as the mother can remember, urine was passed every two or three hours, day and night; in the interval during the day there was only two or three times a normal desire to urinate. The involuntary as well as voluntary micturition was altogether free from pain. The child was always wet, of course, and there was an unbearable odor. A number of physicians in consultation diagnosed the affection as "weakness of the bladder." Externally nothing abnormal is seen. When Kuttner, however, introduced the catheter, a remarkable quantity of urine, similar to residual urine, was drawn off. This was repeatedly observed by Kuttner, and he found, besides, that the cut off muscles energetically opposed the introduction of any large sized instruments. There was no doubt that the walls of the bladder were distended, and that in this case, also, a chronic spasm of the sphincter vesicæ was the cause of the affection, and also explained, without any stretch of imagination, the whole symptom complexus. There existed an antagonism between the power of the cut off muscle of the sphincter and the tonicity or elasticity of the distended wall of the bladder; the urine was hindered from being expelled by the spasm of the cut off muscle in the first instance; then the wall of the bladder, already irritated and distended as a result of the accumulation of urine, was still further stretched by the accumulating urine; as soon as the limit of the power of retention of the bladder was overreached, the wall of the latter naturally endeavored to diminish the tension by getting rid of a part of the excess of urine, overcame the power of the spasmodically contracted sphincter and pressed out a portion of urine; as soon as the intravascular pressure was thus diminished, the sphincter again gained the ascendancy and again completely closed the bladder.

The treatment had to be directed to weaken the sphincter and to strengthen the distended muscular tissue of the bladder; this was obtained, on the one hand, by dilating the entrance to the bladder by gradual dilatation and the passage of metallic sounds, on the other hand by compelling the patient to urinate regularly every three hours. Gradually this was accomplished, and a cure obtained in five weeks, which also proved to be permanent.

CHRONIC SEROUS PERITONITIS.

N. PILATOFF (*Arch. f. Kinderheilk.*, 1898, xxv., 1 and 2). That a chronic serous peritonitis, i. e., a primary, totally independent affection, which is neither dependent on a tuberculosis of the peritoneum, or on

some malignant growth of the organs of the abdominal cavity, and which from its beginning runs a chronic course, and therefore is not preceded by an acute peritonitis, is really met with, is considered by nearly all pediatricists as an established fact. In the same manner we cannot deny that although some of the symptoms conform to those of tuberculous peritonitis (in both affections the disease is assiduously developed, the ascites may be accompanied by slight fever and irregular action of the intestine, i. e., have a tendency to diarrhea, alternating with constipation, abdominal pain and vomiting being absent) a differential diagnosis is, nevertheless, possible during life. In chronic serous peritonitis, historical data as to hereditary tuberculosis are absent, the patient does not present tuberculosis of other organs; on the other hand, they have a tendency to diarrhea, or occasionally the influence of a cold (lying upon damp ground, soaking of the clothing), or an acute infectious disease (typhoid fever, measles) can be elicited, the general health is by no means so greatly affected as in the tuberculous form. The patient remains on his feet for months, in spite of the ascites, which resembles very closely congestive ascites; the abdomen in these cases is not tense or painful; not oval in shape, but round; adurations and adhesions are absent. Finally this disease remains stationary for a long time, when it will nearly always end in recovery, even where no therapeutic measures have been employed. It goes without saying that where the accumulation of fluid is great, paracentesis and even laparotomy may become necessary. That the latter does not always answer, the following case observed by Filatoff will demonstrate:

Boy, $4\frac{3}{4}$ years of age, was admitted September 5, 1896, on account of an increase in the size of the abdomen. The parents are both healthy, all blood relations are free from tuberculosis, syphilis, etc. The patient is the second child of his parents (the first one died, 8 months old, from enteritis), was born at term, nursed at the breast until 8 months of age; received, however, from his sixth month some additional food (paps, bread), and suffered at times from digestive disturbances. The first teeth appeared at the age of 8 months; he began to stand alone when 12 months old; began to walk in the early part of his second year. At the age of 10 and 18 months he passed through pneumonia, after that he was healthy up to the time of his present illness. This latter began April 15, 1896, with fever (as high as 40°), coughing, and he vomited once. The child convalesced pretty rapidly, but about two months later, toward the middle of June, the mother noticed that his eyelids were occasionally swollen in the morning, and a few days later she noticed the enlargement of the abdomen. This is now three months ago. During the time the boy remained on his feet, he did not show any fever; his appetite began to fail, however, and he became pale and thin.

Present state: The boy weighs $32\frac{1}{2}$ pounds; is emaciated, pale. The thorax shows traces of rachitis. There are now no lymphatic enlargements. The tongue is clean; he is not troubled with vomiting or eructations, appetite very poor. The abdomen is markedly enlarged (57 cm.), round in shape, painless, not tense (the thin edge of the somewhat enlarged liver can be palpated, not so the spleen); there is fluctuation present

in the perfectly free ascites, no induration or tumors. The liver reaches below the ribs for three finger breadths, its border and anterior surface are smooth, consistence normal; its upper border can be traced along the mammillary line at the sixth rib.

Splenic dullness cannot be elicited, intestinal sound taking its place. The lungs and heart are normal, cough is not present. The respiration, however, increased (40-44); pulse, 112; temperature 37°, in the evening 37.2° (in ano). There are no subjective symptoms, no hyperidrosis. The urine is acid, contains no salts, free from albumin.

The patient remained at the clinic for three and a half months. During this time there were no marked changes.

The stool, as a rule, normal, was only replaced two or three times by a fluid stool (forty-five days).

The treatment consisted at first in anointing the abdomen with guaiac oil (guajacol, olive oil, aa twenty drops), afterwards application of warm compresses, inunction of ichthyol ointment (1-2 lanolin) then with green soap,—all this without any improvement. On November 18th, the abdomen was punctured, by means of a trocar, and 790 ccm. fluid, somewhat turbid, similar to sherry wine, containing albumin in large quantities, and coagulating on standing, was evacuated; its sp. gr. was 1020.

The circumference of the abdomen, after paracentesis had decreased to 49 cm., but already five days later rose to 53.5, and after some time to 57.5. Laparotomy was determined on, and carried out December 6th. After one week the sutures were removed, and five days later the patient was able to leave his bed. Circumference of the abdomen after the operation 44 cm. One week later, 47; 3 days later, 48.

On December 21st the patient left the clinic, feeling well, but still having ascites. Since then patient was seen a few times. In February he contracted influenza, followed by inflammation of the lower lobe of the lung, when the abdomen greatly increased in size, and had reached the enormous size of 62 cm. on March 1st. This was not accompanied by pain, fluctuation was present, the temperature was normal, the appetite was satisfactory, the stool was normal, patient was in good spirits, able to go around.

The whole course speaks for a chronic serous peritonitis. A portion of the peritoneum, removed at the operation, does not show the slightest sign of tuberculosis. Inoculations practiced on guinea pigs were also negative. The peritoneum and the fluid did not show either tubercular nodules, or bacilli. This case, therefore, proves clearly the existence of a chronic serous peritonitis, in which laparotomy, it is true, accomplished nothing, against all expectation, although it frequently gives such brilliant results in tuberculous peritonitis. However, as laparotomies have as yet, not been repeated in this affection, a rational judgment as to the therapeutic results of this operation cannot be rendered.

EGGS OF THE HOUSE-FLY IN THE STOOLS OF AN INFANT.

MICHAEL COHN (*Deutsche Medic. Wochenschr.*, 1898, xxiv., 191). In the extraordinary distribution of the house-fly in our apartments during the hot season of the year, and the preference which these insects

have to deposit their eggs upon our food, these eggs, without a doubt, not infrequently find their way through the food consumed into the gastrointestinal canal of man. Here, in all probability, they nearly always perish under normal conditions after a short sojourn, from the effect of the digestive juices, and are absorbed, and there is, in all probability, necessarily a certain functional disturbance of the digestive organs, if they retain their power of development in this position and develop into larva. Should the latter occur, the young maggots, which possess lively movement and the faculty to fasten themselves on to the mucous membrane by means of their hooklets, will readily place the former in a condition of irritation; bringing on vomiting, and diarrhea, under which circumstances the living insects will be expelled outward.

Cases of this kind have been frequently described, and there is also sufficient proof that occasionally these larva of the common fly have given rise to long invalidism, under the picture of a chronic enteritis pseudomembranacea.

There is, however, a third possibility in the disposition of fly-eggs which have been swallowed; they may escape absorption in the human economy, but still not finish their transformation into maggots, rather be again evacuated as eggs, be it that their presence in the gastrointestinal canal was too short for their full development, or that they met even when longer present, with unfavorable conditions of development here, which retarded their further development or put an end to it altogether. I was not able to find this fact corroborated in literature, for, in the first instance the exceedingly small eggs in themselves, even if present in large quantities, do not cause any marked symptoms, so as to lead to a more careful examination of the dejecta, on the other hand, these minute formations may be very easily overlooked.

The following history shows, however, that this is not always the case:

A woman came to Cohn in haste one evening, with the story that her 3 months' old baby was already suffering with "worms." The history disclosed the following facts: The child was fed during the first two months of its existence, with Swiss-milk, and later on with cow's milk, by means of the bottle and the common rubber nipple. The stool, which had formerly been firm, became more liquid and more frequent soon after feeding with cow's milk had been begun; at last it became slimy and foamy fetid, occurring five or six times during the day and three or four times at night. The child also brought up cheesy masses, but did not really vomit. Latterly it had also become very restless, frequently crying out suddenly, bent itself double, and became pale in the face. These painful paroxysms usually lasted about five minutes. On account of these symptoms it had been deprived of its milk for twenty-four hours, a flour pap being substituted.

A few days' previously the mother had made a peculiar discovery; when she looked at the jacket of the child, which had been discarded three days previously and placed along with other soiled linen in a dry tub, she discovered a batch of living "worms," exactly on that spot where the vomited cheesy masses were present, and where yellowish spots had also formed, which could not be removed by energetic washing. Two

days later the mother, with intent, again laid aside one of these jackets, soiled with the cheesy particles, to see what would become of them; when she again looked at it, it contained numerous living round "worms," a few of which she brought with her in a piece of paper. Furthermore, she perceived the afternoon before, when she was drying the child, some peculiar white "lumps" in the diaper lying together in three little heaps, and in part intimately mixed with some feces, these she also brought with her, they having in the meantime broken down to small white scales.

Examination of the child itself resulted perfectly negative. The last stool, too, did not contain any abnormal ingredients.

Treatment.—Continuation of the starchy food (the stools had become less frequent since the previous day) if constipation occurred, to administer a clyisma. On the following morning the mother again appeared and told the following facts:

On the previous day the child was quiet during the day, neither vomiting nor having a passage; in the afternoon, however, two of the above mentioned "scales" were present in the sputum (which had increased for some time).

In the evening, towards nine o'clock, the child became restless; on investigation the mother discovered in the neighborhood of the anus a large number of these scales. She then gave the child a clyisma, and caught the water, which contained only a large number (about 1,000) of these white conformations, without any admixture of feces. The patient at once quieted down, and had a natural stool of a pappy consistency a few hours later.

Nothing abnormal was found further in the child; the symptoms of indigestion disappeared, as also the restlessness; the child thrived on cow's milk and developed in a normal manner.

As regards the conformations which the mother brought to Cohn at first, they were of two varieties:

1.—The so-called "worms" were recognized by simple inspection already as the larva of flies. The ten specimens, with the exception of two, were already dead and pretty dry. Two of them, still somewhat fresh, were club-shaped, white, round, worm-shaped, about 8 mm. long; the more pointed extremity presented the black mouth-hooklets, the other two dark rings.

2.—The formations found in the diapers consisted of white, small rod-shaped scales, partly isolated, partly clumped together in heaplets (altogether amounting to about 140). Their longitudinal measurement was about 1.5 mm., their breadth about 0.3 mm. In their dried up condition they presented a polish similar to mother of pearl.

Microscopically they were recognized as the eggs of the common house-fly, from which the larva were also derived.

In what manner did these eggs enter the digestive organs of the child? The usual manner, by way of the food, can hardly come under consideration in this case, and that for the following reasons:

The female fly, as a rule, deposits the eggs in little heaps. The child took, exclusively, food from the nursing bottle; even should the eggs have gained entrance to the milk, it would seem impossible for them to

pass through the narrow orifice of the nipple. It is much more likely that the flies deposited their eggs on the lips of the sleeping child, which were soiled with sputum or vomited residuum of milk, at times when it was not watched, and which were then swallowed. At any rate, if we take into account the number of eggs voided, more than one fly must have deposited her eggs, as one fly only deposits about seventy eggs.

It is hardly likely that the dyspepsia, from which the child suffered for several weeks, was due to the eggs, as may be seen by the fact that the latter in that case must have been present for weeks in the stomach and intestines.

The cessation of the dyspeptic symptoms coincident with the voiding of the eggs may be easily explained by the change in diet, which, as we well know, is frequently sufficient to remove digestive disturbances. The deposition of the eggs in the digestive tract was, therefore, a rather harmless occurrence, and only by chance occurred together with the dyspepsia; on the other hand, the latter might be considered a hindrance to the digestion and absorption of the swallowed eggs.

A CASE OF ACUTE ATROPHY OF THE LIVER IN A CHILD TWO AND ONE-HALF YEARS OLD.

STARCK (*Jahrb. f. Kinderheilk*, 1898, *xlvi*, 2 and 3).—The child was brought to the Universitäts Klinik, in Kiel, May 24, 1897, suffering from jaundice since May 19th. On the first day of illness vomiting had occurred, and a few liquid stools had been passed; on the day following the child seemed relatively well; had some appetite. No cause for this attack could be elicited.

May 24th. The boy was well nourished, presented a moderately severe general icterus. Temp., 38.3°; pulse, 60-70. Thoracic organs, normal. The liver reaching beyond the border of the ribs about two finger breadths, could be distinctly felt; its consistency was increased; not very tender to pressure. Feces were of a greyish-white color. The urine was rich in biliary coloring matter. The diet was fluid Karlsbad salt.

On the following day, the condition had not materially changed; a moderate degree of fever still persisted, appetite was diminished, and the icterus was somewhat increased, the child was becoming weaker, and listless. There were no further changes in the liver, neither in the stool or the urine; diarrhea still continued.

On June 1st, towards noon, the child suddenly became restless, screamed and threw itself violently about in bed. Towards evening it became somewhat more quiet. During the following night it lost consciousness, passed its stool involuntarily. The liver had not diminished in size. June 2nd. Listlessness, irritation of the skin produced only a very slight reaction. Singultus; pulse 90-100. Death occurred at noon, without any other particular symptom.

An exact diagnosis had been impossible; simple, acute atrophy was not diagnosed, on account of the absence of diminution in the size of the liver.

Post-mortem: the follicles of the stomach very cloudy and swollen;

great swelling of the intestinal follicles; great, firm enlargement and yellow discoloration of the liver; great, firm enlargement of the spleen; great cloudiness of the renal cortex and hyperemia of the pyramids; redness and swelling of the mesenteric glands; the heart was pale and of a yellowish color; severe bronchitis; great serous, soaking of the brain tissue, the pons and medulla oblongata. Ulceration of the esophagus; small abscesses and swelling of the tonsils. Special examination of the liver; the latter was enlarged; its surface was partly of a pale, greyish-red color, partly dark-red, showing depressed portions between. On section, largely of an even intensely yellow color, smooth. Weight, 385 grm. (normal weight, 355 gr.) Microscopical examination: all over only a few liver cells present, which were in a state of fatty degeneration; the greater portion of the cut surface consisted of delicate connective tissue, permeated by numerous fatty drops and granules, containing dense, small-celled foci of granulations, hardened. Only single, isolated liver cells were seen, which were well preserved; others were in many places perforated. The lobules consisted essentially of delicate, sparse, small-celled connective tissue, infiltrated in the interlobular tissue with foci of dense cells, so-called, newly formed, biliary capillaries.

The remarkable part of this case was that the disease at first ran a mild course, nothing distinguishing it from the so-called catarrhal form of icterus, that the cerebral symptoms made their appearance suddenly, as in an intoxication, and were followed by death, in less than 24 hours. An acute atrophy of the liver could not be diagnosed, before the occurrence of the cerebral symptoms, for the reason that the enlargement of the liver persisted unchanged. Section also revealed an increase in volume, and a weight above the normal, while under other circumstances, a diminution in the size of the liver is usually found. Death had occurred before the usual diminution could develop; besides the growth of the interstitial tissue was also unusually great, not much was left of liver tissue. In an etiological sense we are probably compelled to assume the presence of an inorganic poison, which initiated the disease. It may be possible that this was furnished by the gastro-intestinal catarrh, which was found at the autopsy, and which probably existed during the whole course of the disease.

In view of the enormous number of cases of gastro-intestinal affections, it is not surprising what a small number of affections of the liver, either severe or mild, occur during the first and second year of life, actual yellow atrophy is exceedingly rare, but icterus catarrhalis also does not at all occur very frequently. As regards the latter, a compilation by Starck from the *med. Poliklinik*, during the last few years, reveals the fact that icterus catarrhalis, as a sequel to gastro-intestinal catarrhs did not occur at all during the first year of life, was relatively more frequent during the second and seventh year, after which period it is again only rarely met with. It is difficult to give an explanation for this relative immunity. There are no peculiar anatomical and physiological conditions which would render difficult the entrance of noxious material, or bacteria from the intestine into the gall ducts of the infants. The size of the ductus choledochus, is even relatively large; the bile furthermore is poor in bile acids at an early age, especially glychocholic acids; therefore possessing smaller antiseptic powers than later. At all events the simple, fluid nourishment of the infant, consisting mainly of milk, is less inclined to the formation of such products of decomposition, which might act deleterious on the gall ducts, or it offers unfavorable conditions to the settlement and propagation of such bacteria, which seemingly are the cause, in not a few cases of the so-called catarrhal icterus.

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ORIGINAL ARTICLES

AN ANALYSIS OF FORTY CASES OF INFANTILE CEREBRAL PALSY ASSOCIATED WITH EPILEPSY.*

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THE literature upon infantile cerebral palsy is very large; Most of it has been contributed within the last ten years. We owe the greater part of our knowledge upon the subject to Freud's and Ries's monographic study in 1891 and to Freud's very voluminous study of 1897 of over 300 pages upon this very interesting subject. In this country and in England we find Sachs, Peterson, Osler, McNutt, Gowers, Clay, Shaw, and others have all contributed extensively to the subject.

Various special symptoms of the affection have been more or less extensively studied in connection with the palsy, such as athetosis and the imperfect forms of this condition, as mobile spasm, coarse and fibrillary tremors, choreiform movements, and conditions of myotonia and myoclonic movements. Studies upon atrophy and hypertrophy, upon reflexes and vaso-motor disturbances have been made and deductions have been drawn from them to explain both the initial lesion and the permanent condition of the brain remaining.

From such studies frequent references have been made to the liability of epileptiform seizures to follow in the track of

* Read before the Craig Colony Medical Society, January 2, 1899.

the gross lesion of palsy. So in this study of forty cases of palsy nothing especially new is to be presented either in the number of cases or in the anomalous forms of the palsy. We simply present these cases as a study of the epilepsy and palsy and their relationship, calling attention to some of the possible means of its physiological treatment.

Of the forty cases, eighteen were males and twenty-two were females. Their ages range all the way from 11 to 30. The causes of the palsy, as ascribed by relatives, are various, and show that we should give such but little serious attention in the majority of cases.

The cause usually described refers to some minor ailment or some resulting symptom of the cerebral mischief. Among the doubtful causes we find five cases produced by dentition. Two were called "teething paralysis." Probably this was urged because the paralysis came on at dentition period. Some writers have urged that the dentition may cause convulsions and these in turn may cause the hemorrhage in the brain. The point whether convulsions can cause cerebral hemorrhage is still mooted.

The preponderance of opinion, ably defended by Gowers, is still in favor of the non-causation of cerebral hemorrhage by infantile convulsion. Convulsive phenomena almost always accompany cerebral hemorrhage as a result of the lesion which lends much aid to the latter view.

Four were apparently caused by acute exanthemata; three by scarlet fever, and one by typhus. In this connection we find whooping cough probably caused one. This is quite as infrequent a cause of palsy as of epileptic seizures. We have seen whooping cough causing but one case of epilepsy in nearly 500 admissions to the Craig Colony. Exposure to cold was supposed to have caused one. Three cases have for causation, injury to mother and fetus in fourth, sixth, and eighth months respectively. Eleven were caused by "prolonged labor and instrumental delivery."

It was found on close examination in these cases that prolonged labor was probably the cause in nine cases and the use of instruments played little or no part in the causation. Gowers and others have called attention to this fact. The length of labor in these nine cases ranged from twelve hours to four and five days. Four of them were primipara. Two were caused



J. L. Arm Type.



N. R. Arm Type.

by blows upon the head. Three were caused by imperfect feeding; such cases probably date from early infancy, and the real cause is probably unknown. Careful inquiry and study showed this was ascribed because the onset of the paralysis was attended by vomiting, an extremely frequent symptom in cerebral lesions in infancy.

Meningitis was ascribed in one case as the causation; it was probably a combination of the attendant symptoms of cerebral hemorrhage. The remaining ten cases: no adequate or probable cause figured in six cases; in two no cause was noticed; and two were unknown through loss of family and personal history.

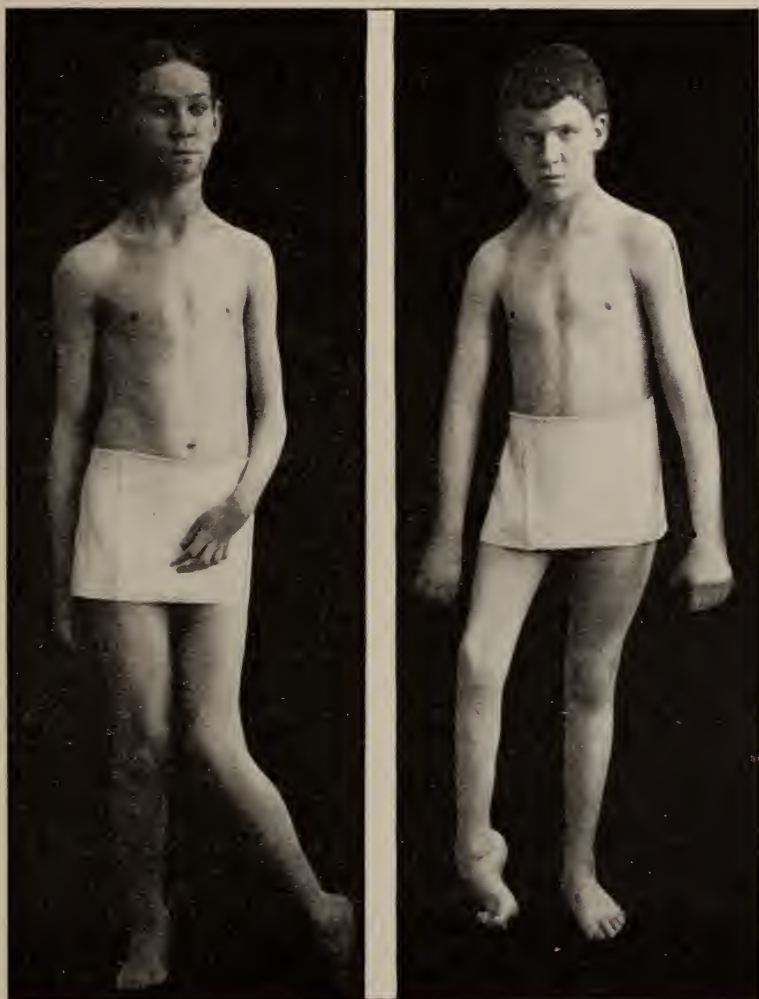
By looking over these few cases we are impressed with the fact that there must be other latent and more potent histologic changes in the cerebral cortex causing the palsy in many cases than is given in the above text on etiology. Because it is so indefinite, such lesions are interesting to the speculative clinician.

Under the age of onset of the cerebral palsy we find eleven occurred at birth, two at 9 months, one at 10 months, two at 12 months, one at 14 months, one at 16 months, four at 18 months, one at 2 years, five at 3 years, three at 4 years, one at 5 years, three at 6 years, two at 9 years, two at 10 years, one at 14 years. A little more than one-half the number occurred under two years of age.

TABLE SHOWING AGE AT ONSET OF EPILEPSY IN PALSY CASES UNDER STUDY.

At birth.....	11	3 years.....	5
9 months.....	2	4 "	3
10 "	1	5 "	1
12 "	2	6 "	3
14 "	1	9 "	2
16 "	1	10 "	2
18 "	4	14 "	1
2 years.....	1		

The family history in nearly all these cases was especially neurotic, more so than the ordinary cases of epilepsy not preceded by paralysis. These cases also were markedly affected by stigmata of degeneration both congenital and acquired. Frequently by observing the hard palate and cranium alone one could detect the palsy. In several cases the hard parts (bony



E. H. Convulsions begin on non-paralyzed side.

R. M. Convulsions begin on non-paralyzed side.

parts of skull) were more noticeable asymmetrical and atrophic than the corresponding soft parts. We hold that the so-called acquired stigmata in these infantile cases are purely developmental and should not be classed as stigmata proper. This fact has been urged for some time by many neurologists and anthropologists.

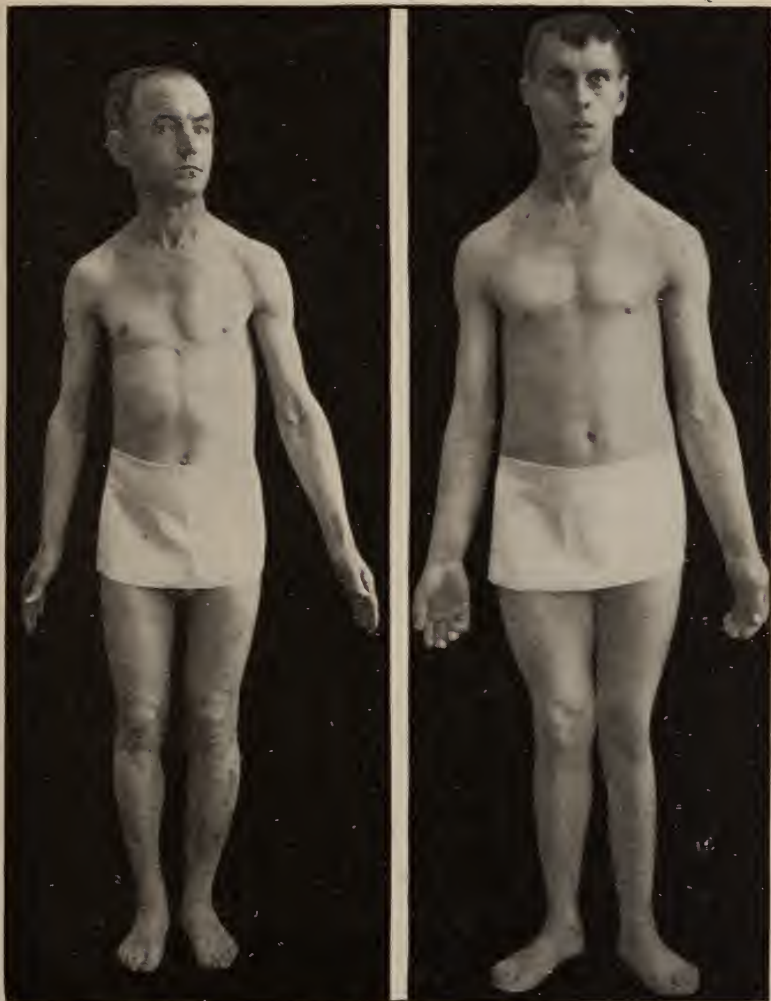
Twenty-one cases had left hemiplegia, eleven severe, and ten in slight forms, frequently the arm alone remaining paralytic. Nineteen cases had right hemiplegia, eleven slight, and eight severe.

The symptoms of onset were almost always uniform, consisting of vomiting, physical prostration, and unilateral convulsions of the side finally paralyzed, but in a few cases (three) they were general, lasting from ten or twelve hours to two or three days and occasionally for two or three weeks, convulsive attacks occurring in series. In six cases there was a decided febrile process lasting from twelve hours to five days. This condition did not seem to be dependent upon the series of convulsions, which was characteristic of the onset in most cases. Infantile convulsions of an epileptic or eclamptic nature are not so frequently attended by extreme elevation of temperature as in the adult from the same cause. Still, not being in regular attendance on the cases at the time, statements of almost always terrified relatives in regard to such matter must be received with great caution.

Those beginning after the sixth year were not attended by so severe convulsive phenomena. In fact, all the symptoms were less severe than we might expect under such conditions.

The earlier the palsy the greater the resultant permanent paralysis. In almost all cases the leg recovered first and most. A third of the cases recovered almost entirely; the palsy was observed only on the closest examination. In examining these few cases, we have been much indebted to the warning made by Sachs and quoted by Freud, that the palsy in many cases of epilepsy coming to the physician's attention because of the latter disease, is almost unrecognizable except on the closest scrutiny. Many so-called idiopathics have come under our observation to be diagnosed for the first time as dependent upon the palsy lesion, simply because we have held in mind this careful warning of Sachs.

The severity of the epilepsy appeared to be in inverse



M. F. B. Leg Type (Right).
'Palsy hardly discoverable.)

W. R. Symmetrical Development.
(Right Hemiplegia.)

ratio to the severity of the cerebral palsy upon which the convulsions depended. The deep reflexes were exaggerated in thirty-four cases on the paralyzed side; normal in three; equally exaggerated on both sides in two; and exaggerated in non-paralyzed side in two. Foot clonus was obtainable in three, all on the paralyzed side. In nineteen cases there was no disorder of motility. In the twenty-one cases of post-hemiplegic disorder of motility the condition ranged all the way from a fine and course fibrillary tremor to that of one case of quite typical athetoid movement. One and possibly two cases might have been termed choreiform in character.

In twenty-three of the forty cases under study, the epilepsy began in one year after the palsy, and, in the majority of such cases it came on as a permanently established disease within a very few days or weeks of the onset of the cerebral lesion. Three occurred within two years of the palsy; three within three years; two within eleven years; two within twelve years, two within thirteen years; one within sixteen years; two within seventeen years; one within eighteen years; and one within twenty-seven years.

No aura preceded epileptic seizures in fourteen cases, leaving twenty-six divided as follows: Twenty sensory, one psychic, one of olfaction, three visual, and one auditory.

Eight of the sensory type were unilateral in the paralyzed side and were characterized as painful; the remainder of the sensory aura were equally divided between general feelings of discomfort, epigastric sensations, and various general cephalalgic feelings of uneasiness. One had typical "globus hystericus" followed by evidences of pharyngeal spasm somewhat similar to laryngismus stridulous. This case had been attacked for the first time while in a paroxysm of pertussis.

The diffusion of the nervous instability of a part of the cortex spreading over the whole brain is very well illustrated in these paralytic cases. Attacks of epilepsy in paralytics may begin locally and continue so for several years, but ultimately become general. Nevertheless this is not always the case; in certain cases the attacks always remain localized in the hemiplegic parts. Three cases in the study show this condition.

Still rarer among the birth palsy cases we find the convulsion beginning and ending always on the non-paralyzed side. Two cases out of the forty showed this form of convulsions. Vari-

ous imaginary and real sensations following convulsions are seen. For the most part they are closely allied to the sensations observed in recovering apoplectic subjects.

The character of attacks seen in the forty paralytic epileptics were almost always of Grand Mal type, occasionally Petit Mal, and in rare instances psychic in character. They generally grouped themselves in series, occurring at fairly regular periods. Over half had daily attacks; all had one or more attacks weekly; fourteen had attacks by day exclusively or predominating; ten by night; and sixteen by day and night equally.

There are two very important facts derived from this study:

The first is that the influence which epilepsy, dependent upon gross cerebral lesions, have upon the so-called idiopathic form of the disease. The study of such cerebral palsy cases in the most careful and painstaking manner gives material aid to the pathologist in solving the riddle of an epileptic paroxysm. Accurate clinical studies and experimental physiological data are valuable and have done about all that has been done so far toward the solution of the epileptic problem. Pathological observation of an illy written and grossly observed case can no longer be of much value. Both observers should be broad minded investigators, capable of seeing the inter-dependence of the two studies and the equal importance of both. One point is decidedly against the cerebral palsy epileptic study being ideal, and that is the one found in all epileptic conditions. The length of time between the establishment of the disease and the study at autopsy is a very long one, in which the repeated accumulation of epileptic seizures may, and probably does, ultimately produce a condition altogether different from the ones after the first few epileptic fits; in other words, we only too frequently see the evidences of the chronic disease, but not of the acute form of it. Only those having had experience in autopsy and microscopical work on the nervous system know how true this statement may be.

The second practical point in this study, and really the first to us as true physicians, is that no amount of bromide or sedative treatment by drugs can wash out or dye the cortical disease upon which the epilepsy rests. The absurdity and impotence of employing the drug treatment alone in such cases is too apparent to necessitate further comment.

The treatment of the condition probably can never be attended by great results, but what little is to be hoped for must come through physiological educational lines. Only by the most untiring and unremitting energy of the physiological teacher can we hope to teach the unstable nervous tissue to be still, crippled but still morbidly active.

The years of bitter, disappointing, drug panacea treatment in these few palsied epileptics appeal to us for help. How can we extend it in any better way than in following it out in the rational suggestion given? We do not ignorantly assert the plan to be new with us, but it is one of the old but infrequently practiced truths.

It is hoped that one of us will expand this suggestion into a practical working plan in a future paper.

A TRACHOMA SCHOOL.

A few months ago there was opened by the city authorities in Milan a school for children afflicted with granular conjunctivitis. The school is an annex of the Ophthalmic Institute, and comprises two rooms, each of which can accommodate fifty pupils. At the present time the total number of children in the school is sixty. When lessons are over the children go to the institute to be treated, and only after treatment are they allowed to go home.—*N. Y. Med. Rec.*

IN FAVOR OF COMPULSORY VACCINATION OF SCHOOL CHILDREN.

The associated health authorities of Pennsylvania have adopted resolutions in opposition to a measure introduced in the Pennsylvania Legislature aimed at the repeal of an existing law making compulsory the vaccination of pupils in the public schools, and have delegated a committee to present these resolutions before the House Committee on Public Health and Sanitation.—*N. Y. Med. Rec.*

THE DIAGNOSIS OF SOME OF THE COMMON
ERUPTIVE FEVERS.*

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SO many difficulties are sometimes presented in the diagnosis of some of the eruptive fevers that the physician, whose duty it is to make a diagnosis, feels that a great responsibility is thrust upon him.

It is often very important that an early and correct diagnosis be made, both for the comfort of the patient and the protection of others, as well as for the reputation of the physician. This is especially true when small-pox is suspected.

Since vaccination has become so general, typical small-pox is seldom seen, most of the cases that are now met with being modified by previous vaccination. Unfortunately this modification has no uniformity.

About a year ago the writer read before another association a paper upon the diagnosis of small-pox. This subject was then considered from the standpoint of the sanitary official, but in this paper it is the purpose of the writer to consider the diagnostic points of some of the most common eruptive fevers from the general practitioner's point of view.

It is in cases of suspected small-pox that the responsibility is most felt, not so much on account of the danger to the patient, as this disease in the modified form is, as a rule, trivial, but that by an early diagnosis others may be protected and the public relieved from unnecessary alarm.

Many of the physicians of the present time have never seen a patient suffering with this disease, and but few a sufficient number to be familiar with its symptoms.

The period of incubation in small-pox is from one to two weeks, most authorities giving fourteen days as the limit. The writer has seen the premonary symptoms begin on the fifteenth day after the last exposure in a case that proved fatal. In this instance the patient, a colored man, had, to the writer's

* President's address read before the New Haven County Medical Society, Oct. 27, 1898.

knowledge, been several times unsuccessfully vaccinated, and several times exposed to the disease without contracting it.

This complaint is usually ushered in by a chill and the febrile symptoms common to most eruptive fevers.

There is generally intense headache and backache, but these symptoms do not have the diagnostic value that many believe. The temperature is from 103° to 105° , and remits upon the appearance of the eruption. This generally begins upon the third day, but sometimes appears somewhat earlier, or as late as the fourth or even the fifth day.

Just preceding the characteristic eruption there may be a redness of the skin, of an erythematous character, which may be mistaken for scarlet fever, or isolated patches which may be mistaken for measles.

The eruption is first macular, but soon becomes papular. It begins on the face, particularly the forehead and nose, then appearing successively on the neck and wrists, the chest and arms, gradually extending over the whole body, showing last upon the legs and feet. As the eruption becomes papular there is an induration of the tissue involved, which gives to the touch the sensation of small shot under the skin. This is characteristic of the disease, and is of great value in establishing the diagnosis. The center of the papule is then elevated by a drop of liquid, forming a vesicle. This is never observed under twenty-four hours from the formation of the papule.

The vesicles gradually increase in size for four or five days, and are usually surrounded by an erythematous circle. As they increase in size the center becomes depressed, forming an umbilication, which becomes more and more pronounced. The vesicles contain a milky serum, and are not easily ruptured. An eruption undergoing nearly the same changes is found in the mouth and fauces. When the vesicles have obtained their full size, which they do in four or five days, they become pustules, and on account of their fullness and the pressure, lose their umbilication. At this time there is an exacerbation of temperature, and the liability to confound this with any other disease practically ends.

In scarlet fever the period of invasion is short, and is ushered in by chilly sensations and sometimes by a distinct chill, followed generally by vomiting and a high temperature; that does not remit upon the appearance of the eruption, which

is present usually within twenty-four hours, and is characterized by an efflorescence which is impalpable to the touch, and appears upon the chest and upper extremities before it shows upon the face.

The throat is deeply congested and painful, even before the eruption is present upon the body, but there are no papules or vesicles. Sometimes there is an exudate resembling that of diphtheria. There may be severe headache and backache, but not so pronounced as in small-pox. When the rash first appears innumerable small red points are to be seen, but as this progresses the skin becomes more deeply congested, giving a deep scarlet hue to the whole surface, more particularly to the parts that have been kept hot by the clothing.

Pressing the finger over the rash, the skin is perfectly smooth, but a white line is left over the course the finger has taken, which rapidly disappears on removing the pressure, and the scarlet hue returns.

The eruption usually attains its full development on the first day, seldom later than the second, and about the fourth day begins to fade away. At first the tongue is coated, but within a few days this clears off, leaving a bright red surface studded with swollen papillæ, giving the strawberry appearance, considered by many as characteristic of scarlet fever.

The stage of invasion in measles is generally longer than in either of the diseases mentioned above. This is usually four days, and during the whole period there is general malaise, chilliness, and all the symptoms of acute coryza, such as red and swollen eyes, running from the nose, sneezing, hoarseness and a hard, dry cough, which increases in severity during the whole prodromal stage.

The eruption first begins upon the face, gradually extending over the whole body, and, as in scarlet fever, the temperature does not fall with this change.

These lesions have a tendency to arrange themselves into a crescentic form, are of a pale reddish color, slightly elevated, soft, and do not become papular or vesicular. Upon the second day the eruption attains its maximum, and upon the third day begins to rapidly disappear.

In German measles the eruption is to the eye of most physicians nearly identical with that of true measles, and it is difficult to distinguish between the two.

J. P. Crozer Griffith, of Philadelphia, describes two forms of eruption which he terms rubella scarlatiniforme and rubella mobilliforme. In the first type the rash is confluent, in large patches, covering nearly the whole surface, is not elevated, and very closely resembles scarlatina. In the second the spots are nearly as large as those of measles, have the same color, are slightly raised, are more or less grouped, and are difficult to distinguish from measles.

The most important points in establishing a diagnosis of German measles are the absence of or slight prodromal manifestations, mild catarrhal symptoms, but little fever, sore throat, and the enlargement of the cervical glands and the glands behind the ears. Yet there are cases in which it is impossible to distinguish between German and true measles.

The disease which has most frequently caused the writer trouble, and has been the source of many anxious moments, is varicella. This often closely resembles modified small-pox. Text-books say but little concerning this resemblance.

The difficulties of a differential diagnosis seldom continue for more than forty-eight hours, but for at least that time it is occasionally impossible to positively distinguish between the two diseases.

Chicken-pox in a young child is easily recognized, but in an adult with a profuse eruption it is more difficult. In many instances in varioloid the constitutional symptoms are no more severe than in varicella, and to the eye the lesions are identical.

The stage of invasion in chicken-pox lasts but a few hours. There may be headache and backache of the same character as in small-pox, but usually less severe and of shorter duration.

The eruption sometimes appears in the mouth and fauces, and also upon the palms of the hands and the soles of the feet.

For a diagnosis we must depend upon the history, the course of the lesions and the sense of touch.

In obtaining the history it is essential to ascertain the date of the last vaccination, if there has been exposure to either chicken-pox or small-pox, and the duration of the prodromal symptoms.

The papules in this disease are seldom seen on account of the brevity of this stage, except in persons with thick skins.

In these there may be an error in diagnosis on account of the length of time between the appearance of the papules and the vesicles. The vesicles are not full, are irregular in shape, and are easily ruptured and empty themselves. Around the edges the skin may be thickened, but not indurated. In a few hours they begin to dry in the center, giving the appearance of being umbilicated, but close inspection will reveal a small black central spot—the beginning scab which causes this appearance, but never umbilication.

My attention was first called to this central dark spot in the vesicle of chicken-pox, many years ago, by Prof. M. C. White, of New Haven, and close observation of many cases has verified his opinion that it is very useful in establishing a diagnosis. There may be present at the same time both papules and vesicles in all degrees of development, and showing in successive crops and varying greatly in size.

The points, then, to be borne in mind are that in small-pox we have two days prodromal symptoms, with severe headache and backache; the third day the eruption appears, and the temperature remits. The eruption is first macular, then papular, and feels like shot under the skin, and never becomes vesicular under twenty-four hours. The vesicle is always umbilicated, does not rupture easily, and becomes pustular in four or five days. The same eruption may be found in the mouth and throat. The lesions of acne and the small vesicular syphiloderm may sometimes be mistaken for variola, but the former is a chronic eruption without fever, which may have papules, vesicles and pustules at the same time, that never becomes umbilicated, and change from papules to vesicles and from vesicles to pustules slowly.

When the small vesicular syphiloderm is umbilicated it strongly resembles small-pox, but this is chronic, usually without fever and is seldom seen. This can be readily diagnosed when the history can be obtained.

In scarlet fever there is a short stage of invasion, the fever does not abate with the appearance of the eruption, which is efflorescent and impalpable to the touch.

The eruption first appears upon the chest and arms. The throat is deeply congested and may sometimes be covered by an exudate, but never has papules or vesicles.

In measles there is coryza and bronchitis—usually four

days prodromal symptoms, the temperature does not fall with appearance of the rash, which has a tendency to arrange itself into crescent-shaped patches, is slightly elevated and soft. Grissol's sign, which is said to be infallible in distinguishing between measles and small-pox, consists in stretching the skin. To the touch in the former disease the surface is smooth, while in the latter the hard elevations can still be felt.

Chicken-pox is not likely to be confounded with any other disease, except when it occurs in an adult and the eruption is profuse, then it may be very readily mistaken for small-pox. The diagnostic points in this disease are, the few hours prodromal symptoms, with slight constitutional disturbance and less intense headache and backache, papules last but a few hours and do not have the shotty feeling definitely marked, the vesicles form early and rupture easily, and if they appear to be umbilicated, can be distinguished by small black centers. The vesicles rupture early and dark scabs form, while the vesicles of small-pox become pustular, and when they rupture, have a thick yellowish crust, and there is a much longer interval between papules and scabs.



UNCOMPLICATED EPIDEMIC INFLUENZA AS IT AFFECTS VERY YOUNG CHILDREN.

CHARLES O'DONOVAN, A.M., M.D.,

Professor of Diseases of Children in the Woman's Medical College,
of Baltimore.

IN December, 1898, the "grippe" re-appeared in Baltimore quite severely, and showed a particular affinity for young children. I saw in private practice seven children, between the ages of 4 months and 2 years, who suffered from uncomplicated "grippe," in each of whom the symptoms were so exactly identical that the picture of the disease seems complete. Although the onset was in each case sudden, there were distinct prodromal symptoms of excitement, not at all violent, but it was noticed that the child had been particularly bright and lively before it became ill. This stage lasted from three to six hours and ran usually through an afternoon. Instead of going quietly to sleep, as usual, the child had continued excited and restless, with some increase of warmth of surface, not excessive. To this succeeded more or less continued fits of vomiting, bringing up quantities of food, curdled milk, or whatever had been eaten. Immediately after vomiting the fever began, and rose quite rapidly to 104° or 105° , with some thirst and more vomiting as soon as water or milk was taken. The tongue remained clean, the mind was clear, the child could be amused but was languid and weak from the repeated efforts at vomiting; the bowels were natural or slightly costive; respiration was but little hurried.

In uncomplicated cases, with which I am now dealing exclusively, the pulse was quite weak and very rapid, 160 or 180 being often counted. Auscultation of the lungs and heart showed nothing abnormal in either organ. The urine was high colored, making a distinctly yellow stain on the napkin. I was not able to obtain any for a satisfactory clinical examination. The vomiting continued until the bowels had been moved by a laxative, small doses of calomel being used in every instance at half-hour intervals, until the characteristic stools were produced.

But little food was allowed; this could be managed

quite readily as there seemed to be no desire for it; a little milk being all that was taken, and that rather as a drink than because of hunger. Cool water was given freely and was very grateful. After the vomiting ceased and the bowels had been moved, the high continuous fever was the chief symptom, producing restlessness and extreme weakness. There was no pain in the joints or elsewhere, as far as I could discover, but there was great muscular weakness—shown by the tottering gait of the child when walking and by its frequent collapse as soon as it let go of a supporting object. There seemed also to be difficulty in maintaining an equilibrium in addition to the muscular weakness.

The child soon learned that its usual play was out of the question, and was readily persuaded to remain in bed. Quinine, given by preference in suppositories, had no effect on the temperature; antipyrin, given the same way, did reduce it about two degrees, but it was used only once and then before the diagnosis had been established; the other cases were watched and allowed to run themselves out without treatment, except the laxative, the time required in every instance very closely approximating thirty-six hours. Although the children were quite ill during the continuation of the fever, it was considered to be better practice not to interfere in any way with the course of the disease, which was self-limited and of short duration, every attention being given to the effort to prevent the development of complications.

The result always justified this course, as the children rapidly pulled themselves together after the disappearance of the fever, and in two or three days' time were as well as ever.

Food was allowed in increasing quantities as soon as convalescence was established, and it was noticed that the appetite reappeared at once, the difficulty being to prevent the child from over-eating in its desire to catch up. No after-effects were noticed in any of the cases; none of that lassitude or prolonged weakness that so frequently protracts the convalescence of adults from similar attacks; both the nervous system and the vascular system seemed to resume their normal functions promptly after the fever disappeared, thus showing that even this very depressing disease does not interfere materially with the well known ability of the child to recuperate with great rapidity after an illness.

The complications most to be found are general bronchitis and broncho-pneumonia, but with complicated cases I do not desire to deal, for the picture then would be very different from that which I have described.

The treatment of these cases should be the simplest possible; the vomiting I consider to be beneficial, as the stomach is unloaded and food is rejected at a time when, owing to the very high fever, it would in all probability do more harm than good. It is good treatment to assist nature in this matter and unload the bowels also by means of some gentle laxative, such as small doses of calomel, which is as good as any, as it helps to allay the irritability of the stomach.

Food should be withheld as much as possible; the child should remain in bed, which it usually is quite willing to do, after a few feeble efforts to struggle against the overwhelming weakness which accompanies the high fever; the room should be well ventilated, free from noise or excitement of any kind, such as mistaken efforts to amuse the child or visits from sympathizing friends of the family; light but sufficient bed covering should be supplied, and sudden changes of temperature and currents of air about the bed are to be avoided; the temperature of the room should be a trifle high and equally maintained. I was best satisfied with 75°.

The diagnosis is to be made by exclusion of other causes, such as a sudden and severe elevation of temperature, and also by the recognition of the existence of "grippe" in the community in epidemic form.

As depicted here, the disease presents no remarkable features, and in each instance advanced kindly to a rapid and fortunate termination. I consider it, however, a very important matter to recognize it readily and take the steps necessary to produce this result, otherwise a very different state of affairs may readily be produced. While the normal form of the disease is not disquieting, a complicated case with broncho-pneumonia will cause no end of anxiety to the physician and will often produce a fatal ending.

Suspected cases should therefore be promptly confined to the warm nursery and every measure should be adopted to prevent serious complications.

NOTE ON THE TREATMENT OF PERTUSSIS.

By J. MADISON TAYLOR, A.B., M.D.,
Philadelphia.

ENDLESS observations of a most varied character are constantly offered for the relief of whooping cough, and the gravity of the disorder abundantly warrants the research. That it is an infection, bacterial in character, producing seriously destructive toxemia, is now practically proven.

Koplik first and independently, and soon after Czaplewski and Hensel, have recorded as constant in pertussis a facultative anærobic bacillus, resembling in its morphology the influenza bacillus, though of somewhat larger size.

Later Behla comes to the conclusion, by reason of careful studies of the infectious quality of the expectoration, that the exciting cause of whooping cough is a micro-organism, not of a bacterial nature, not found in the blood nor epithelium, and does not possess an intra-cellular growth, but belongs, as Deichler and Kurloff also believe, to the protozoa, its whole deportment testifying that it is an ameba, increasing by division and presenting the formation of spores.

Whatever the exact character of the morbid agent, toxemia results more or less severe and protracted. It is local in its primary action, as Micheal long ago asserted, and recently confirmed by Moizart, we may expect relief from measures which check or limit its progress. Clinical experience tends to prove this to be, in great measure, operative. My own practical researches during some months, in a large epidemic, which affected my own children, and recorded in the International Clinics (Vol IV., series 6), leads me to believe that a variety of measures directed to local cleansing of the upper respiratory passages are powerful in limiting both the progress and severity of the process.

Whenever these can be systematically applied they should be faithfully employed. As a valuable local as well as systemic remedy, suggested to me by Dr. Edward Watson (whose clinical experience and judgment is vastly in excess of his literary industry) the use of acidulated solutions of quinine hold a high place. No one agent in my hands has accomplished so much. My attention has recently been directed to a more promising measure, which I have not yet been able to prove, but which I

hold ready against the next occasion when pertussis is rampant in my clinics, viz., vaccination upon those not yet thus protected.

A member of my class at the Polyclinic College, Dr. W. B. Taylor, of McKeesport, Pa., relates eleven cases thus treated, two of which passed out of sight, but were presumably relieved, and nine cases entirely and promptly relieved in at least two weeks from the time of vaccination. In all instances he waited till the diagnosis was indisputable and then the operation was performed.

So soon as the inoculation was fully accomplished, about the fourteenth day, the cough modified, and only a bronchial irritation remained, which soon passed away. The suggestion came to him from Dr. D. C. Huffman, surgeon to the National Military Home, of Ohio.

Dr. Huffman writes me that twenty years ago Dr. Knox, of McKeesport, called his attention to the fact that vaccination would cure whooping cough, and he experimented with the subject for several years while enjoying a large general practice.

In 1884, while a member of the Committee on Health of Alleghany County Medical Society, he read before that society a paper on the subject, which was not published. In 1889 he saw an extract from a German paper, giving credit for the observation to some German authority. Practical experience of this sort is of large value and oftentimes passes unrecorded.

Injections of serum from animals undergoing the process of vaccination have also been found efficacious, but this is a most inaccessible measure.

Lately, Lacroix, Coyon, and Dutrambly record satisfactory results from the use of inhalations of medicated oxygen, saturated with such drugs as bromoform, bromide of camphor and cherry-laurel water.

In conclusion of this brief note let me call attention to the continued value, in my clinics, of a remedy to relieve and check the force of the paroxysm, which can be safely applied by the mother or nurse. This consists of a mixture of amyl nitrite 3ss, spts. chloroformi 3 iii, ether sulph. 3 v., of which a few drops can be applied on a handkerchief held to the child's nose during the "lock spasm."

I feel convinced that this measure has limited the severity of the process upon children in many directions. My assistants and students frequently testify to its value, and I have yet seen no reason to fear any danger from its use.

DISEASES OF CHILDREN IN PORTO RICO.

By MAJOR GEO. G. GROFF, M.D.,
United States Navy.

A FEW preliminary remarks will be proper. The island, about the size of Connecticut, has a population of one million, making it one of the most densely populated portions of the globe. The people are a small, spare, dark race, a mixture of Spaniard, African, and Negro. Few are pure white, few pure African.

They are, generally, very poor. Families are, as a rule, large—twelve to twenty children being not uncommon for one woman to possess. They begin to bear children early, and they do it often.

The poor live on bananas, yams, rice, and salt codfish, to which we may add coffee and rum. Two meals a day only are eaten—coffee at rising, breakfast at 11 A.M., and dinner at 6 P.M. It is said the poor laborers often dispense with the coffee and in place take a cigarette and a glass of rum.

Cigarettes are sold as low as 1 cent per pack of ten and rum at 1 American cent a glass.

Children of the poor are never dressed until they reach the age of 6 to 8 years. Although parents seem to be universally kind to their children, they play around in the dirt, gorge themselves with vegetable food until they become almost universally "pot-bellied," like calves weaned too young and turned out to grass.

Although the temperature does not fall much below 75° at night, houses are shut up tight, as nearly hermetically sealed as possible. This habit of sleeping in foul air, the vegetable diet, and the malarious nature of the soil, make the whole people anemic and a prey to tuberculosis, of which disease the great portion of them die in time.

In the towns the floors are of marble or cement, and cold to the skin. On these cold floors the naked babies lie, crawl, and play all day long. That rheumatism plays some part among their ailments goes without discussion.

The natives are forever washing their clothes, but their

homes and their persons are neglected; skin diseases come in for a share of the evils which afflict this people. Leprosy is not, however, here.

The climate is hot; the water contaminated; vegetables and meats are eaten. Bowel troubles are common among children and carry many of them off.

There are fairly good public schools in the towns, but there are very few schools in country districts. All the diseases which can best flourish where ignorance rules are to be found in the country.

Scarlet fever is said to be unknown. Rachitis is not seen. There are very many blind, which is probably due to the very great prevalence of gonorrhea.

About five-sixths of the children born are illegitimate. that is for one reason or another, the poorest are not married, only live together until they can get enough money to pay the expenses of a marriage. Few ever get this sum. Some men support several families, though this is not common.

Drinking water is commonly filtered through rich filters, and some large germs are taken out. Insects, mosquitoes, and fleas eat up some children and possibly worry a few adults to death.

There is little variety in the food, for although the island grows hundreds of fruits and food-plants, the natives live on a monotonous diet of codfish and rice, extended by the banana.

Small-pox is a necessary disease, yet it has marked very few people on the island. They seem to have it lightly.

The climate is unvarying through the year. It averages near 80° F. month after month. In the shade it is pleasant all the time. In the sun, oppressively hot, or rather the sun seems to have on a person some peculiar effect which inclines him to seek the shade and rest. The nights are cool and the sleep is refreshing, if fleas are absent.

Disease germs are abundant in the Tropics, simply because there is no winter to stop their growth, and because of the abominable sanitary conditions which nearly universally prevail. Give tropical communities good laws and good sanitation, restrain the use of tobacco, rum, and the early and promiscuous illicit relations between the sexes, and diseases will not be widely different from those in temperate regions.

San Juan, February 15, 1899.

A CASE OF OLD DISLOCATION OF THE ELBOW JOINT IN A CHILD—OPERATION—RECOVERY.*

By CHARLES GREENE CUMSTON, M.D.,
Boston, Mass.

Assistant Professor of Surgical Pathology in the Faculty of Medicine of
Tuft's College.

THE case that I have the honor to report is interesting, firstly as to the pathologic findings, and, secondly, in the good result obtained by operative measures in old dislocations of the elbow. Bertha K., age 11 years, fell in the first part of February, 1897, striking on her left arm, and sustained a backward dislocation of the elbow.

The patient was first seen on April 12, 1897, just eight weeks after the injury had occurred. Careful examination showed that the elbow joint was ankylosed and practically entirely useless. The forearm formed an angle of about 130° with the arm. The olecranon could be seen projecting directly backwards, while the trochlea humeri could be distinctly made out by palpation in the bend of the elbow.

The patient was put under ether narcosis, and forcible reduction was attempted, but after several unsuccessful trials it was abandoned and an operation was decided upon.

On April 14 ether was again given, and artificial anemia of the limb was obtained with Esmarch's band. Allier's incision for resection of the elbow was made, and the ends of the bones composing the joint were freely exposed and found in good condition. The bones had formed adhesions with the capsule of the joint. These adhesions extended from the anterior aspect of the bones of the forearm to the posterior aspect of the humerus, at which point they were particularly extensive and thick.

On the inner aspect of the humerus and a little above the external epicondyle a pyramidal-shaped process of bone had formed, which extended to the head of the radius and was the cause of preventing the motion of the forearm.

* Read by title before the Surgical Society of Belgium, March 24, 1899.

This long prominence, or, more correctly, exostosis, was chiseled off, the adhesions broken down, and the capsule excised, after which the dislocation was easily reduced. The forearm was flexed at right angles with the arm, and the joint was packed with sterilized subgallate of bismuth gauze and the skin incision closed with silk. The limb was placed in a paste-board splint.

The following day the child complained of considerable pain in the joint and there was a slight edema of the hand, but both symptoms disappeared within twenty-four hours.

The dressings were removed on the fifth day, and the gauze packing was taken out of the joint; the gauze was perfectly dry. On the tenth day the skin sutures were removed and the incision had united per primam.

On the twentieth day we began passive movements of the joint, which were very painful and difficult to make, but little by little movement became easier, so that within five weeks from the time of operation the forearm could be made to make an angle of 32° with the arm. The faradic current was then begun and given daily for eight weeks.

Seven months after the operation, when the patient was last seen, the forearm was somewhat pronated, the movements of supination were a little limited but pronation was perfect. Active extension could be made to an angle of 125° and flexion reached nearly 60° .

The child could use her arm, so that she was practically in no way inconvenienced, and the result obtained was in every way satisfactory.

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EDITORIAL COMMENTS

Tuberculosis in Children

Reference was made in this journal a short time ago to a statement advanced by Sir Richard Thorne, in which he maintained that deaths from tabes mesenterica in children under one year, and also from tuberculous meningitis, have decidedly increased in Great Britain during the past two or three years. Sir Richard Thorne attributed the cause of this increase in infantile mortality to infection into the alimentary canal by the agency of tuberculous milk. Numerous experiments have demonstrated the fact that guinea pigs, when fed on tuberculous material, quickly develop tabes mesenterica, and that cows with tuberculous udders give tuberculous milk, thus the deduction was arrived at that infants, whose principal food is milk, become tuberculous by drinking it. Dr. Leonard Guthrie, physician and pathologist to the Children's Hospital, Paddington Green, is quite opposed to this theory, and in an article in the *Lancet*, February 4, strenuously combats the view. Dr. Carr of the Victoria Hospital for Children, is in accord with Dr. Guthrie's opinions, and proves from records of post-mortem examinations that tabes mesenterica is rare in children under two years of age, while it is almost unknown in those under one year of age. Both Guthrie and Carr are of the opinion that the infection of tuberculosis in children is more frequently derived from the respiratory than the alimentary tract. Dr. Comby, speaking at the Fourth French Congress for Internal Medicine, said: "A child becomes tuberculous by way of the respiratory organs, not through the digestive tract." In order, if possible, to clear up the point, Dr. L. Guthrie has put his notes of post-mortem examinations on children dying from tuberculosis in

the Children's Hospital, at Paddington Green, in tabulated form, and has drawn therefrom the following conclusions:

1.—Thoracic tuberculosis in children is more common than abdominal in the proportion of three to two.

2.—*Tabes mesenterica* as a cause of death in young children is practically unknown.

3.—The preponderance of thoracic over abdominal tuberculosis is not necessarily and solely due to the direct entry of the bacilli into air passages.

4.—Primary infection through the alimentary tract does not prove that food has been the sole source of evil. Therefore tuberculosis in children is not likely to be materially checked by purification of milk supply alone.

5.—The alleged increase of tuberculous meningitis of late years is probably due to pulmonary tuberculosis set up by a severe attack of measles.

Furthermore, Dr. Guthrie, in support of his contention that infection to children caused by cow's milk has been greatly exaggerated, says: "After all, the strongest argument against milk as an important producer of tuberculosis is that children of the class to which hospital patients in England belong seldom get milk from the cow. They are invariably fed on condensed milk and cheap patent food." The mass of evidence is, without doubt, in favor of the theory of infection through the respiratory tract, and it is possible, too, that Dr. Guthrie is right when he says that the fear of infection by means of milk is carried too far.

**A Proposal to Feed Infants
at Public Expense**

Improper and deficient feeding, with the consequent disorders of the digestive organs, has long been recognized as the principal cause of infant mortality. The advance in knowledge of bacteriology and its application to the rendering of

infant food germ free has doubtless prevented a large number of diseases and deaths. Nevertheless the mortality among young children, due to unsuitable food, is still extremely high. Some medical men believe that if children were reared on food prepared according to their methods or in a manner which they uphold, that the human race would soon be stronger and happier both in body and mind. But the worst of it all is that there is so much disagreement as to which is the best food. Some swear by cow's milk, so artfully prepared that they declare it almost exactly simulates the natural food of infants; others contend that it is impossible by any process now in vogue to produce a mixture so identical or even very closely identical with mother's milk. Others again pin their faith to farinaceous foods.

The truth is that the ideal infants' food has yet to be produced, and Dr. Jacobi asserts that little advance has been made in this respect these scores of years. However, if we have not yet reached the *ne plus ultra* of excellence in infant diet, it is still a matter of too common knowledge that among the poor thousands of little ones yearly perish or grow up puny and rickety through being inadequately or improperly fed. How to alter this state of affairs is a problem that has for many years exercised the minds of philanthropists.

The solver would indeed be a public benefactor. A project has recently been mooted in England, which, if carried out, might go far to effect the solution. The proposal alluded to is that children of the poor should be fed at the public expense. Of course this is socialism of the deepest dye, the common-sense person will immediately draw attention to the fact that improvident parents who marry young are chiefly to blame, and that it would be manifestly unjust to tax the sensible part of the community for the benefit of the reckless and unthinking. But it is useless to blame when children are always in evidence. Something must be done with them. If left alone or to the tender care of their parents, they will,

in the majority of cases, either die in infancy or grow up deformed and weak, and wholly unfit to fight the battle of life. The *Hospital*, referring to the matter, suggests that some of the money that is so lavishly spent on education, might, with advantage, be devoted to the feeding of infants, and asks whether it would not be better to spend public money for a short time during infancy in securing that they shall grow up strong and straight and fit to earn a living, rather than to spend money in their support during these long years in after life, when, in consequence of their imperfect development they have become inmates of workhouses, reformatories, and jails." The scheme reads utopian and visionary, but although perhaps at present impracticable, it yet contains the germs of sense. Any plan that will tend to improve the stamina of the human race and to stay the present fearful infantile mortality is at least worthy of attention.

Earache in Children

Earache is a somewhat common complaint with a certain class of children. These are of a weakly constitution, generally strumous, and suffer from the distressing malady when their systems have run down, consequently the treatment should be of a building up nature, good wholesome diet with cod liver oil and syrup of the iodide of iron. Some text-books lay at the door of tympanic neuralgia the occurrence of attacks of earache in children. Dr. E. B. Gleason, Clinical Professor of Otology, Medico-Chirurgical Hospital, Philadelphia, writing on the subject to the "Medical Council" for January, 1899, denies this, and says the larger proportion of earaches of children are inflammatory rather than neuralgic in character, and the result of subacute catarrh of the middle ear. Tympanic neuralgia, Dr. Gleason declares, is an extremely rare complaint, especially with children. The most common cause in children of

subacute catarrh of the middle ear, in which hardness of hearing and recurrent earache are the most noticeable symptoms is, according to Dr. Gleason, simple chronic naso-pharyngeal catarrh. For the relief of this condition, warm clothing, thick-soled shoes, abundance of sunlight, fresh air and other hygienic measures are recommended. Deafness and earache are often brought on by adenoid growths or some other form of obstruction, and an operation should be resorted to before permanent damage is inflicted. In fact, in all cases where children suffer from recurrent earache a careful diagnosis should be made, in order to determine absolutely that the cause is not due to obstruction.



BOOK REVIEWS

THE PRINCIPLES OF BACTERIOLOGY. By Dr. Ferdinand Heuppe. Translated from the German by Dr. E. O. Jordan. (The Open Court Publishing Co., Chicago, 1899.)

The science of bacteriology can scarcely yet be said to have emerged from its infancy. The many text-books upon the subject have had for their chief aim instruction in methods, at the same time giving the student a brief summary of the history of investigation, together with the most important facts so far ascertained, but there has been but little attempt to treat the subject from a standpoint which would give a critical and scientific exposition of all its bearings. This, as stated in the preface, has been the design of Professor Hueppe in the above work, and it is astonishing that this design could have so far been carried out within the small limits of the present volume. A very limited section is given to description of the principal pathogenic organisms, the book being otherwise devoted to a consideration of the subject of bacteriology in its more general bearings, especially as regards the connection between it and hygiene and other branches of medicine. The sections upon the structure and vital phenomena of bacteria are calculated to give a much clearer and more definite idea of these organisms than any work that we have yet encountered, while the sections devoted to the cause, cure and prevention of infectious disease and to the consideration of natural and acquired immunity are admirable in their breadth and scope of view, and in the scientific method which seeks to penetrate beneath all empirical and superficial standpoints in order to ascertain the true meaning of phenomena, and their relation to environment, and to all natural causes.

Professor Hueppe is especially emphatic in his protest against the extreme views of those who look upon bacteria as the one cause of disease, without giving due consideration to other factors. His views are such as appeal to the reason, and they are forcibly presented, but it cannot be said that he altogether escapes the charge of partisanship himself, especially when he speaks of disinfection after contagious disease as a measure of desirability rather than of necessity.

The translation is good and free from foreign idioms, and the excellent type and good paper make it a pleasure to read the book.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE.—SECTION ON PEDIATRICS.

Stated Meeting, February 9, 1899.

HENRY KOPLIK, M.D., Chairman.

A Tongue Depressor for Children.—Dr. H. D. CHAPIN, in presenting a new tongue depressor for use on children, stated that all practitioners had doubtless experienced difficulty in securing a good view of the fauces in infants. In such patients the tongue was high, and the opening small, and apt to be obstructed by mucus, and the irritability of the stomach often led to regurgitation of milk. Everything depended upon getting a good view at the first attempt. To this end the attendant should hold the baby on the left arm before a window, and secure both of the child's arms firmly with her disengaged arm. The physician should guide the head of the infant with his left hand, using the tongue depressor with his right. At night a candle was preferable to a gaslight, because of the greater ease with which the light could be directed just where it was wanted. The ordinary tongue depressors, as well as spoons, he said, did not properly grasp the base of the tongue, and were too large, hence they were not well adapted for use on infants. To obviate this difficulty he had had constructed a tongue depressor which was sufficiently small, and which was curved forward so that when its end reached the tip of the epiglottis the base of the tongue would be well controlled. One reason that pharyngitis and tonsilitis were often often overlooked in infants was that the throat was not properly inspected.

Dr. H. KOPLIK said that he had long appreciated the difficulty of inspecting the throats of infants, and for that reason had asked Dr. Chapin to present the instrument. He had made it a rule to teach students not to pull, but to *tilt* the instrument.

The Bactericidal Power of Blood Serum in Infants and Children.—Dr. HENRY KOPLIK said that in testing for the Widal reaction he had been surprised at times to find the bacteria disappear. In one case in which the bacteria had disappeared within ten minutes after having been exposed to the serum diluted sixteen times, he had investigated this matter further. Within fifteen minutes the typhoid bacillus had become disintegrated by reason of the bactericidal power of the blood serum. Pfeiffer had demonstrated this action in the peritoneal cavity of rabbits. So far as he knew, the demonstration that he was about to make was the first one in this city which had been outside of the body, and independently of it.

An Unusual Case of Open Ductus Arteriosus in a Child of Twelve Years.—Dr. E. LIBMAN reported this case. He said that patency of the ductus arteriosus without other defects of the heart was quite rare, only twenty-six such cases having been recorded. It had been generally found in these cases that the structure of the ductus resembled that of the larger arteries, and to this the patency had been ascribed. It was not incompatible with a fairly long life. Of the twenty-six cases, the youngest was a newly-born child, and the oldest an adult, 66 years old. One-half of the cases had lived until, or after, the age of puberty. The heart presented by Dr. Libman had been removed, at a post-mortem examination, from a girl of 12 years, who had been under observation for several months in the service of Dr. Sharlau at the Mount Sinai Hospital. She had been treated six months at the dispensary prior to her admission. She had not been ill before coming to the dispensary, and had always been active and free from cyanosis. Two weeks before first coming under observation she had expectorated some blood, and there had been a number of such attacks during the last six months of her life. On May 26, 1898, she had entered the hospital because of a very profuse pulmonary hemorrhage. There was marked hypertrophy of the right ventricle of the heart, an area of dullness continuous with that of the heart, was situated in the first and second intercostal spaces, and reached nearly to the middle line. A systolic pulsation and bruit were present in this area, and a loud systolic murmur was transmitted in all

directions. The radial pulse was slightly smaller on inspiration, but the pulse in the lower extremities was still smaller. The murmur could be heard behind at the level of the fourth and sixth dorsal vertebræ. The liver was enlarged. In the hypogastric region was a mass somewhat smaller than the normal spleen, which could be pushed up into the normal splenic area. There was recurrent laryngeal paralysis. She had left the hospital in August "improved," but had returned later with edema, marked hypertrophy and dilatation of the heart and a petechial eruption. Her temperature had been nearly normal. The urine had contained albumin and hyaline and granular casts. The right branch of the pulmonary artery had been found, at the autopsy, closed by a firm clot. The mass in the abdomen proved to be a floating spleen. The heart showed very marked hypertrophy and dilatation, but the valves were normal. The laryngeal nerve was caught tightly at the margin of the ductus arteriosus. There was a clot in a small aneurismal dilatation of the aorta, and the petechia were due apparently to the blood current having carried off portions of this blood clot. Clinically, there had been evidence that the blood had passed from the aorta into the pulmonary artery, but the sacculatation showed that at some time previously the blood must have passed from the pulmonary artery into the aorta. There was atheroma of the pulmonary artery.

Dr. B. SHARLAU said that the child had first entered the hospital in an almost moribund condition, and with a hemorrhagic infarction of the lung. The diagnosis during life had been congenital stenosis of the pulmonary artery.

Dr. H. HEIMAN said that he had had an opportunity of examining the case during life, and had been interested in the fact that it had closely resembled aneurism. The rarity of this latter condition in children had made them hesitate to make such a diagnosis.

A Case of Multiple Adenomata of the Rectum and Ascending Colon.—Dr. FRED. KAMMERER presented a little girl, who had come under his care a year ago last summer with a history of having had hemorrhages from the rectum for some months previously. Examination of the rectum had

revealed a pedunculated growth, situated about 4 inches from the anus. Under narcosis this growth had been removed, but considerable difficulty had been experienced in arresting the hemorrhage. The child had done well for a time, but the following year the hemorrhages and mucous discharges from the rectum had reappeared. One year after the first operation there had been another free hemorrhage from the rectum. The examination had revealed a similar growth to the first one, but situated rather higher up. Suspecting the presence of growths still higher up, an incision had been made into the left side of the abdomen, exposing the sigmoid flexure and two separate tumors. Both of these growths had been removed through one incision, after ligation of their pedicles. The wound in the sigmoid flexure having been closed, the entire colon had been passed through the hands of the operator. By this examination another tumor had been detected just at the uppermost part of the descending colon. This had been removed in the same way. The mucous membrane of the intestinal tract was otherwise normal. The wounds had been united in tiers, and healing had been satisfactory. On examination these tumors had proved to be adenomata. Experience had shown that adenomata of the rectum were usually single tumors. He had previously described the occurrence of multiple adenomata in a girl of 18 years. In that case various operations had been done, including resection of the sacrum and the establishment of an artificial anus. There had been hundreds of small adenomata. Three years after the artificial anus had been closed the girl had returned with the first recurrence. She was still under treatment for these tumors. The peculiarity of the case just presented seemed to be the presence of single tumors in various parts of the intestine. The prognosis in this case was probably more favorable because of the otherwise healthy condition of the mucous membrane of the bowel.

Dr. F. HUBER said that the case was of interest to him in connection with two others that he had under observation at the present time. Within the past six weeks he had seen a little child suffering from asthma and adenoids in the pharynx. There being a history of some rectal trouble, an examination had been made of this part, and several adenomata had been

discovered. In another case a tumor had been removed without difficulty, and a second one a year later.

Dr. THOMAS S. SOUTHWORTH said that the rectum should be examined with the finger in all cases in which there was hemorrhage from this part. He had known of the diagnosis of prolapse of the rectum being made, and astringent injections ordered, with the result that polypi had come away.

Dr. KOPLIK exhibited under the microscope sections of the adenomata.

Delorme's Operation for Chronic Empyema.—Dr. B. SHARLAU read a paper on this subject. He said that Delorme had shown that it was only necessary to detach the thick fibrinous masses found in chronic empyema to allow of the expansion of the lung. He advised resecting two or three ribs, thus giving free access to the pleural cavity, and then peeling off the exudate. When this had been done, it would be found that the lungs would readily expand. It was only necessary to resect a few ribs. The speaker said that he had tried the operation in seven cases, with six complete recoveries and one death, the latter not being due to the operation, but to scorbutus from which the child was suffering at the time of coming to the hospital. His own method of operating was to remove the soft parts with scissors, and then ligate in sections *en masse*, with heavy pedicle silk, close to the ribs. After this had been done, he cut away the chest wall with the scissors, thus making the operation an almost bloodless one. By gentle manipulations to and fro the exudate could be loosened from all over the pulmonary pleura, only small portions requiring a cutting instrument to liberate them. In one case the lung was superficially torn, but the accident had given rise to no bad symptoms. In very old cases the exudate might have become so much organized as to be practically a part of the pulmonary pleura, so that it could not be removed without laceration of the lung; but so far he had not met with such a case. The operation had only been done a few times in this country.

Dr. WILLY MEYER said that, in his opinion, the safest and most through method of operating for empyema in children was by resection of a sufficient portion of a rib to allow of the removal of fibrinous masses from the pleura. If the expansion of the lung after operation were left entirely to nature, the result would be unsatisfactory; for this reason a method should be adopted which would assist the expansion of the lung. A good plan was to have two bottles containing colored fluid, and to instruct the children to blow the fluid from one bottle to the other. This expiratory effort could be made specially powerful by raising one bottle above the other. He had done the various operations for empyema, and had obtained from the Estlander operation better results than from Schede's method. It had not been until Delorme had proposed his operations that surgeon had turned their attention from the chest wall to the pleura. The beautiful results of this operation had certainly justified the method. The very first operation for the radical cure of chronic empyema should be this one of Delorme. If this procedure did not succeed, it would still be in order to try Schede's or some other operation.

Dr. F. HUBER said that while he had seen a large number of acute cases, he had not met with many chronic empyemas. He did not think there would be many chronic cases if incision were resorted to early, and a large double drainage tube were introduced. He was accustomed to do this operation without an anesthetic, as the crying of the child favored the discharge of the fluid and of the masses of lymph. Most of the cases had not lasted longer than six weeks. Of about 100 operations he only recalled two cases that had required a second operation.

Dr. WILLIAM H. THOMSON said that he had always recommended having a bacteriological examination made of the pus first drawn, because in the difference of the prognosis between cases infected with the pneumococcus and those associated with streptococcus. The prognosis was far more favorable in the first class. In the streptococcus variety he would not hesitate to recommend prompt incision and resection of the rib, while in the cases of pneumococcus infection recovery would often follow simple aspiration. Estlander's operation was certainly

very severe, and in adults he personally looked upon it as one of the capital operations because of the profound shock produced. The operation of Delorme appeared, from the description, to offer decided advantages. Dr. Thomson said that he had long regarded so-called amyloid degeneration as probably the result of a toxic agent from pus. This so-called "degeneration" was really not a degeneration, but an infiltration with new material, and hence it could be recovered from. The amount of amyloid change was often greatly out of proportion to the quantity of the discharge. He would welcome any measure which would prevent the formation of permanent sinuses, and the subsequent amyloid change.

ANNOUNCEMENT.

The next meeting of the Ohio State Pediatric Society will be held at Springfield, O., May 9th, beginning at 2 P.M., the day before the Ohio State Medical Society's meeting in the same city.



PRACTICAL NOTES

Stenosis After Intubation of the Larynx.—NACHOD reported a case of decubitus of the larynx in the course of intubation for diphtheria, and followed by cicatricial stenosis. The child had been tracheotomized three times, and the stenosis is now being dilated by bougies.

Infantile Spinal Paralysis.—FALK is said to have observed a case in a child, 15 days old, which ran its course without fever, and resulted in a spontaneous cure within four weeks. (Falk was undoubtedly dealing with an osteochondritic (syphilitic) pseudoparalysis, unless there was some other cause for the epiphyseal enlargement, Ed.)—*Munch. Med. Wochenschrift*.

Spasm of Glottis:—

R	Asafetid	7.0 (1.8 drams).
	Liq. ammon acetatis.	25.0 (6.6 drams).
	Aq. menth. pip.	60.0 (15.5 drams).
	Syr. croc.	20.0 (5.1 drams).

M. Sig.—A teaspoonful every hour or two.

—MILLER.

Imperfect Eyes.—According to the examination of 12,000 eyes in children, 6 to 7 years of age, by STEIGER, during a period of 3 years, 13.1 per cent. were imperfect. He attributes this, in one-half of the cases, to existing astigmatism.—*Corresp. f. schw. Aerte*.

The Value of Widal's Serum Diagnosis in Typhoid Fever of Children was discussed by NACHOD, and he endorsed its value. He said that he had succeeded in excluding typhoid fever in many cases in which typhoid would otherwise have been diagnosed.—*Therap. Wochenschr*.

Contribution to the Question of Moller' (Barlow) s Disease. BARON (*Munch. Med. Wochenschr.*, 1898, *xlvi.*, 565 and 598). The author, together with six cases of Barlow's

(Möller's) disease, whose history he outlines, and which do not, as regards the objective findings and their course, show any marked deviation from the presentation of disease, as we know it from previous descriptions, discusses the question as to the nature of the disease. The author identifies himself with the view that Möller's disease is not of a scorbutic nature, but that, as we also read in Baginsky's *Lehrbuch der Kinderkrankheiten*: "We can hardly assume anything but a specific agent as the cause of the disease." It was a disease *sui generis*, which was really more nearly related to the scorbutic affections than to rhachitis. As to the nature, however, of the exciting causes of the infection, we, it is true, lack all information at present; but it does not seem altogether unreasonable that they are related to the bacillus hemorrhagicus described by Kolb and Finkelstein, respectively, and that they are nearly related to the specific exciting causes of scorbutic disease discovered by Babes.

As a justification of this assumption of an infection which readily attacks by preference anemic, rhachitic, or children otherwise debilitated, we may point to the frequent, although perhaps not regular appearance of fever in the beginning of the disease, which as a rule disappears again after a short time; furthermore, to the enlargement of the spleen, which is plainly marked in a large number of cases, and which disappears at the expiration of a certain period, and finally to the presence of albumin in the urine.

If we admit the disease to be an infection, the various therapeutic successes may very well be understood, thus, for example, the favorable influence of salol, the fruit juices, rich in vegetable acids (lemons and oranges), and lastly that of fresh yeast (a teaspoonful three times daily). The administration of green vegetables is, therapeutically, very active, due to the fact that the salts they contain are, in their total combinations, very similar to those which exist in the blood, and their use should also be retained, for the reason that they permit a certain change in diet.

ABSTRACTS

CHANGES PRODUCED BY GROWTH IN THE INFANTILE UTERUS.

FRIEDLANDER (*Wiener klin. Wochenschr.*, 1898, xi, 453) discussed the above at the Vienna Obstetrical Society, (15, 2, '98) in the following manner:

We are able to discriminate several stages in the development of the infantile uterus, in which the growth of the uterus, as a whole, as well as that of its individual parts, progress in an uneven manner. In the first quinquennium of life the size of the uterus is not markedly increased, the growth is exclusively carried on by an enlargement of the neck of the uterus, whose relative length at the end of five years of age is greatest. The body of the uterus only begins to develop at six years of age, the ovaries at the same time showing an increased growth. The maximum of tissue growth in the uterus is only reached near puberty.

In a similar manner as that of the muscular tissue of the uterus, its mucous membrane also changes, which is especially seen in the cervical canal, and that during the first quinquennium, when a surprisingly rapid growth occurs, which by far exceeds that of the muscular tissue. The rapid increase of folds, during the period stated, is to be looked upon as an expression of this relatively rapid increase of the surface of the mucous membrane in the cervical canal. While we are able, during the early months of intrauterine life, to only demonstrate the existence of a median longitudinal furrow—the meeting line of both Müller's tubes—there are grouped around this, long into the later period of extra-uterine life, in rapidly increasing numbers, the lateral folds of the plical palmata. The direction of the furrows, bounded by the plica, in the lower third of the uterine neck, is in a downward direction; in the upper third, on the other hand, they face the inner mouth of the womb, and thus form a system of valves, which in nearly 30 per cent. of the infantile uterus leads to a retention of the secretion of the body of the womb. This retention is seen in the dilatation, more or less, of the uterine cavity, which may lead to rendering perfectly smooth its otherwise corrugated inner, wall. The retained secretion within the cavity of the womb, on its part now exerts pressure on the thin edges of the valves, whose margins in places become edematous through obstruction to the outflowing blood. This obstruction naturally involves the papilla of the mucous membrane which covers the valves, especially, which grows under the repeated edematous recurrence to tuft-like, polypoid formations. The number of these peculiar formations, only seen in the fresh preparation after carefully removing the clinging mucus from the mucous membrane, but then quite distinct, is frequently very large, and then they markedly increase the relative stenosis of the inner os uteri.

The equalization of this circular vitiosus is brought about by the more rapid growth of the body of the uterus, which raises up the upper folds of

the cervical canal. When the effects of these folds are done away with, the local edema of the papilla, and with this also every other cause for the retention of the secretion in the body of the uterus ceases. Accordingly, this dilatation of the uterine cavity is only found in isolated cases after the sixth year of life. Indication of valve-like formations at the internal os, on the other hand, are not infrequent, even at the age of puberty, which, though they may not influence the slight amount of secretion of the quiescent mucous membrane of the uterus, might easily become an obstruction to the outflow of blood in profuse menstruation, and thus give rise to dysmenorrhea.

A SCHOOL AND HOUSE EPIDEMIC OF ALOPECIA AREATA.

BLASCHKO (*Berlin klin. Wochenschr.*, 1898, *xxv.*, 108). The case presented by Blaschko to the Berlin Medical Society, (19, 1, '98) is in itself nothing unusual, the patient showing nothing besides the typical picture of alopecia areata. The case is, however, of especial interest because it throws a surprising light on the etiology of the disease, and demonstrates the contagious power of the affection, as has been continually claimed by the French.

The boy belongs to a small school and house epidemic of eight cases. The history is that of eight boys from a parochial school in Berlin, who became affected with this disease one after the other during the recent summer. Two of the boys live in the same house, the other three were very intimate playfellows and schoolfellows, the third one resides opposite the first two. The father of one patient is a barber, and also attended some of the boys in his professional capacity. This complicates the matter, and we may assume three possible ways of contagion: in the school, in the yard where all boys played together, or through the barber. Undoubtedly it was carried from one to the other. Herpes tonsurans and eczema seborrhoicum can be excluded. The cases are typical alopecia areata, accompanied by the peculiar atrophy of the hair roots, the slight trichorrhexis, etc.; the scales noted here and there are the result of repeated applications of tincture of iodine.

Discussion: Behrend does not believe in the contagious quality of alopecia areata; he has never met with their accumulation in families or schools. As a rule, other affections should here be considered. In this case, also, the mentioning of scales is to him suspicious. In alopecia areata the skin is perfectly smooth, and only in a very acute beginning is a slight redness present.

EXTRAUTERINE PREGNANCY, LAPAROTOMY, A LIVING CHILD, RECOVERY OF THE MOTHER.

J. JURINKA (*Centralbl. f. Gynacologie*, 1898, *xxii.*, 333). In this case the child, a girl, is of especial interest to us, who was born asphyctic, but was resuscitated in a short time by blowing air into the lungs and employing cutaneous irritation. The mother remained in the institution

sixty days, and during this whole period the child was therefore under observation.

The child was not carried to full term, weighed 2,250 grams ($4\frac{1}{2}$ lbs.) at birth. It was fed with Soxhlets milk, and lost flesh up to the tenth day of its life, when it weighed 2,040 grams (4.1 lbs.) From this time on it gradually gained somewhat, and when dismissed it weighed 2,320 grams (4.6 lbs.) The measurements taken at birth and when dismissed (60 days old) were as follows:

Length, 45-48 cm.; head measure, D. b. t., $7-9\frac{1}{2}$; D. b. p., $8\frac{1}{2}-10$; D. m. o., $13-13\frac{1}{2}$; D. f. o., 11-12; D. s. b., $9\frac{1}{2}-10$; circumference, c. m. o., 35-37; c. f. o., $32\frac{1}{2}-34\frac{1}{2}$; c. s. b., 31-34.

These figures show that the growth of the skull was only slight in the direction of the sagittal suture, while the breadth was increased markedly, which can possibly be explained by the fact that the skull was diagonally compressed on account of the absence of room in the abdominal cavity.

The child had all the following deformities immediately after birth: The skull was strongly flexed to the right side, so that the right half of the lower jaw lay closely in contact with the breast, and the articulation of the jaw with the right shoulder. The skull could, it is true, be raised, but resumed its flexed position in a short time. This position was, accordingly, the result of the following asymmetries of the skull: the face was strongly pushed to the right, the lower jaw being moved to the left, and, besides, not meeting the lower jaw equally in all parts; within the left side of the mouth the alveolar processes gaped, while they were in close contact with each other on the right side; besides this, the right half of the lower jaw was smaller and more flattened than on the left, on account of the pressure, and the sight of the articulation of the right jaw was distinctly depressed, so that the indentation could be seen in the head when the latter was raised from the shoulder, which was formed by the pressure of the shoulder.

The left region of the forehead and vertex also presented a marked flattening and broadening from the close pressure exerted by the skull on the shoulder, while the right region was narrowed and more convex. The occiput towered above the right shoulder behind, markedly protruding.

The child, at the same time also presented nervous disturbances; the right palpebral fissure is narrower; the eyelid more furrowed, the left angle of the mouth lower than the right, the left naso-labial fold more flattened, when moved both show a better nerve supply than on the right side, where these parts maintain their contracted position nearly immovably. The right masseter muscle is more firm, and seems to have retained its function better than the right. The right arm remains adducted to the body, on moving the elbow about 90° ; the right hand is strongly flexed toward the ulnar side (90° degrees), the fingers form a fist, and the thumb maintains a strong opposition and flexion contracture. Only very slight movements of the third, fourth, and fifth fingers are made spontaneously, retaining, however, their position of palmar flexion. The left hand does not present any notable abnormalities. The left lower

extremities present stronger spontaneous movements than the right. Both feet are in equinus position, the right more so than the left. The toes of the right foot are permanently fixed in the claw-position, and the fourth toe of both feet is pushed in a dorsal direction out of the row of toes. The muscles of the right lateral half of the body, especially those of the right extremities are rigid, partly presenting a spastic contracture, and on account of this, pretty strong resistance is felt on making passive motion.

Both patellar tendon reflexes are exaggerated, somewhat more obviously on the right side. Pressing the patella downward excites a patellar spasm on both sides. All other reflexes, as well as sensibility, are seemingly intact. Spontaneous movements are carried out decidedly more frequently and more variously on the left side.

We therefore find present a spastic paresis in the region of the right facialis of the lid and cheek, as well as in both extremities of the left side, more so in the upper extremity. Here we find a condition of pronation, as well as a contrature as regards the ulnaris and median muscles, namely, a preponderance of the flexor muscles, as we usually find present in a central lesion (of the central convolutions or the cerebral motor track).

The right leg is extended, its flexor movements are more infrequent, we recognize therefore a preponderance of the extensor muscles, which would also point to a cerebral lesion. The pes equinus, which is present on both sides, as well as the dislocation of the toes, can probably be referred exclusively to the want of space in the amniotic sac.

The whole symptom complex therefore points to a lesion of the left lateral central convolutions (resp. of the cerebral motor tract), especially in the region of the facialis and the upper extremity, with a consecutive spastic paralysis, especially of the facialis of the right lid and cheek and of the right upper extremity.

In how far the asymmetry of the skull should be looked to for the explanation of these nervous symptoms, we are, of course, unable to say.

The fact, however, that these conditions remained nearly unchanged from birth to two months leads us to suspect a deeper, perhaps permanent, lesion of this region. The cause of the deformity of the skull, especially the flattened condition of the left vertex region, cannot be found in the isolated pressure of a bone, for the spot referred to was found in the right hypochondrium, about three finger breadths below the arch of the ribs, but rather in the contracted space of the amniotic sac, which was intimately in contact with the fetus at every point, and only left room for a slight amount of amniotic fluid in the deep parts of Douglass' cul de sac.

CONTRIBUTION TO THE ETIOLOGY OF PSEUDO-CROUP.

ZIMMERMANN (*Münch. Med. Wochenschr.*, 1898, *xlv.*, 922). Pseudo-croup manifests itself always and under all circumstances equally as an inspiratory dyspnea, which suddenly makes its appearance in healthy young children at night as a hoarse, barking cough, and which, in spite of

its threatening aspect, ends in a perfect and spontaneous recovery; disposition to its recurrence is, however, left behind.

Most authors look on the cause of its occurrence as being a disease of the larynx. According to the author's view, who had treated sixteen cases of pseudo-croup within a period of two years, there is some connection between adenoid vegetations of the naso-pharyngeal space and pseudo-croup. The manner in which adenoid vegetations produce an attack of pseudo-croup may, without too great a stretch of imagination, be explained as follows:

The mucus from the naso-pharyngeal space may enter the entrance to the larynx, especially in the recumbent position, and produce here, analogous to the spasm of the glottis which is caused in painting the larynx, a contraction of the false vocal cords; by a coughing paroxysm, which obtains its barking character from the overlapping of the false vocal cords, the closure is opened, but only temporarily; at the end of the cough it again becomes closed, even before sufficient time has been given for a deep inspiration; and we witness the picture, in a typical manner, of an attack of asphyxia brought on by absence of oxygen. Only after the contraction the false vocal bands are again relaxed as a result of the carbonic acid intoxication, respiration is again resumed.

This manner of production of the spasm, if assumed as correct, would probably also explain the presence of subchordal edema; this would represent in an extreme case not the primary, but a secondary transudation to the loose submucous connective tissue, produced by a hyperemia. That pseudo-croup is not a disease per se, but only a symptom dependent on the presence of vegetations in the naso-pharyngeal cavity, is proved by the fact that a removal of the adenoid vegetations puts an end to the pseudo-croup.

A CASE OF URTICARIA PIGMENTOSA.

TH. MAYER (*Berl. Klin. Wochenschr.*, 1898, xxxv., 516). Such a case from Lassar's clinic was presented by Mayer to the Berlin Medical Society (18.5, 1898):

The 2-year old, otherwise perfectly healthy, even well-nourished child, presented an eruption which covered his whole body, excepting the head. It consisted of various large (the size varies between that of a lentil and the thumb) light to dark-brown colored spots, besides which other forms of efflorescences are also visible; here and there, ordered in groups, and distributed to the most various parts are a number of bright red, roundly, oval papular formations on a hyperemic base; furthermore, these same formations, which are, however, more noticeable to the touch than to the sight, present a slight exudation on the superficial strata of the skin, and also isolated efflorescences at the distal parts of the body, as the border of the foot, in which this exudation has led to marked bullous formations. The affection lasted over a year, and began with the formation of the very smallest papules, which made their appearance at times here, at times there, and which always disappeared spontaneously, leaving a pigmenta-

tion behind; this progressed in exacerbations, the history of their appearance, with great itching, always being repeated.

Both the previous history and the clinical picture warrant a positive diagnosis of chronic urticaria accompanied by pigmentation. The affection is of rare occurrence, and was observed only four times in 100,000 patients of the institution; never, however, with the appearance of a transudation.

GERMAN TREATMENT OF DIPHTHERIA IN LONDON.

The second report of the Metropolitan Asylums' Board on 2,764 cases treated during 1896 shows that the mortality was 25.9 per cent. Taking them according to age the percentage mortality is seen to diminish progressively from 32.2 among those under 5 years of age to 4.2 at ages over 20. While according to days of the disease it rises from 5.2 in those who came under treatment on the first day to 31.7 in those admitted on the fifth day and after.

The total mortality of all cases treated during 1896 (including those not treated with antitoxic serum) was 20.8, as compared with a mortality of 29.6 per cent. in all the cases treated in 1894, before the serum was used. Having regard only to those patients under 5 years of age, the mortality was found to be respectively 47.5 in 1894 and 30.2 in 1896.

Very striking is the fact that nearly 60 per cent. of the tracheotomized children recovered in 1896, while in 1894 the mortality was more than double.

As regards dosage, the average number of infections was 2.3, the average dose was 1,893 units per infection. With the strongest serum supplied 8,000 units can easily be given at one injection. "With such a serum the rule must be to give, in seven cases, 8,000 to 12,000 units every twelve hours for the next twenty-four or forty-eight hours.

The conclusions arrived at by all the Board, with one exception, are as follows:

- 1.—A great reduction in the mortality of cases brought under treatment on the first three days of illness.
- 2.—The lowering of the combined general mortality to a point below that of any former year.
- 3.—The still more remarkable reduction in the mortality of the laryngeal cases.
- 4.—The uniform improvement in the results of tracheotomy at each separate hospital.
- 5.—The beneficial effect produced on the clinical course of the disease.

The records of the University College cases, reported by Martin and Hunt, are even more instructive. All the cases were admitted on clinical grounds as diphtheria, thus disposing of any fallacious comparison on the score of the mild cases, which were formerly overlooked clinically, being included solely on the bacteriological test.

In all, there were admitted in 1896 and 1897 a total of 185 cases, but of these seven must be excluded (*viz.*, five which recovered without antitoxin

because they were not considered true diphtheria, and two fatal cases in which antitoxin was only given by the mouth), leaving 178 cases treated with antitoxin.

The effect on the mortality is best shown by comparing the mortality of the three antitoxin years with the preceding non-antitoxin years. The percentage mortality in the four non-antitoxin years was: laryngeal cases, 70, 68, 78, 47; pharyngeal cases, 18.7, 14.4, 10.9, 30; total percentages, 43.5, 33.3, 37, 39. The same figures in the three antitoxin years successively were: laryngeal cases, 33.3, 40.0, 23.5; pharyngeal cases, 24.4, 10.0, 13.0; total percentages, 28.0, 17.7, 17.0. And further evidence of the value of the early administration of antitoxin is shown by the table here quoted:

MORTALITY ACCORDING TO DAY OF DISEASE.

Year.	Admitted from first to fourth day of disease			Admitted after fourth day of disease.		
	Cases.	Deaths.	Percentage of mortality.	Cases.	Deaths.	Percentage of mortality.
1891.....	39	19	48.7	21	8	38.1
1892.....	31	11	35.5	24	9	37.5
1893.....	50	14	28.0	34	17	50
1894.....	36	14	38.0	23	10	43
1895.....	46	8	17.3	28	13	46.4
1896.....	66	9	13.6	34	7	29
1897.....	60	7	11.7	28	8	28.6

Again they compare the mortality in the tracheotomy and intubation cases:

MORTALITY OF TRACHEOTOMY AND INTUBATION CASES.

Year.	Tracheotomy.		Intubation.		Total.		
	Cases.	Diad.	Cases.	Died.	Cases.	Died.	Mortality.
1890.....	41	30	1	1	42	31	74
1891.....	17	15	17	9	34	24	70
1892.....	12	6	8	3	20	9	45
1893.....	39	30	..	..	39	30	77
1894.....	34	17	..	..	34	17	50
1895.....	25	5	..	..	25	5	20
1896.....	18	7	..	..	18	7	39
1897.....	29	7	..	..	29	7	34

A point of very great value is the very much better results obtained by employing larger doses of antitoxin than were formerly used. In the first series of mortality figures above cited it is shown that the total mortality of 1895, the first antitoxin year, was 28 per cent., which was much greater than that of 1896 and 1897; the second and third antitoxin years, in which it was 27.7 and 17 per cent. respectively. During 1895 the antitoxin used was obtained from various sources; its strength in normal units was not known, but it was certainly very weak, so weak that an insufficient dose (often under 1,000 normal units) was generally given. The only change in the treatment during the next two years was the administra-

tion of a more concentrated serum of known unit strength, and of this a much larger dose, averaging 7,200 units in 1896 and 7,800 in 1897 was employed.

In the later year six-sevenths of the cases received over 6,000 normal units, and it is now the practice of the hospital to give each patient, on admission, a dose of not less than 6,000 normal units.

One of the most important and instructive results shown by the author's cases is this great saving of life which has been effected by the increase of the dose of serum. In 1897 the number of units given was between 4,000 and 12,000, the average being 7,000 to 8,000. Local treatment was employed in almost all cases. In the majority, swabs of chloride of zinc (grs. x to $\bar{3}$ i) were employed; in others, sprays of perchloride of mercury or douches of chlorine water.

All cases had steam sprays of bicarbonate of soda at two-hour intervals. The authors remark that when we consider the very frequent association of pus and septic micro-organisms with the diphtheria bacillus in the throat, it is clear that we must not rely on antitoxin alone, but must also use local antiseptics in order to obtain the best results.

They also demonstrate the beneficial effect of the antitoxin treatment in causing a decline in the temperature earlier than in the pre-antitoxin days.—*London Hospital*.

CODDLING OF CHILDREN AND THE INFECTIOUSNESS OF COLDS.

The treatment of tuberculosis by fresh air and good diet is now thoroughly recognized as the most beneficial one, and everywhere sanitariums conducted on these principles are springing up. But it should be remembered that if proper care is taken of children when young that there would not be the need of sanitariums there now is, as in many instances the seeds of consumption can be eradicated by judicious bringing up. It is a fact, both instructive and interesting, that in many of the coldest portions of the globe colds are unknown. Nansen and his men when in the Arctic regions, although they underwent exposure of every description, never suffered from colds, but no sooner had they set foot on their native shore of Norway than they one and all caught cold. The experience of other Arctic explorers is the same. It seems, then, probable that after all there is something in the theory that colds are infectious.

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ORIGINAL ARTICLES

EIGHT CASES OF LAPAROTOMY FOR INTUSSUS- CEPTION—SIX RECOVERIES.

By CHARLES P. B. CLUBBE, M.R.C.S., England.

Hon. Surgeon to the Prince Albert Hospital; Hon. Surgeon to the Sydney Hospital for Sick Children; Joint Lecturer on Clinical Surgery at the Sydney University.

CASE. I.

ERNEST M., aged 7 months, admitted to the Children's Hospital September 26, 1897, at 5 P.M. The mother states that he got pale and blue the previous afternoon; began to vomit soon after and has done so frequently ever since. Began to pass blood by bowel this morning; no slime with it. No sign of normal motion today. Bowels had been quite regular before this.

On examination—no tumor to be felt. Abdomen quite lax; not at all distended. The child does not seem to be in any pain and is a good color.

Under chloroform a tumor can be felt in the region of the cecum, following the course of ascending and transverse colon olive oil was injected, when most of the tumor disappeared, only a small mass in region of cecum remained.

Abdomen was then opened to the right of the middle line over the mass. This was found to be cecum into colon, and was reduced without much difficulty. A gauze drain was intro-

duced and the abdomen closed. The child bore the operation well and suffered very little from shock.

The child did well till the fourth day when the temperature suddenly rose to 105° —its pulse was 180 and its respiration 60. It had a little diarrhea, and passed some green motions.

The next day its temperature was normal, and after that it made a quick recovery and was discharged cured October 13, 1897.

CASE 2.

Alice Cordingly, aged 6 months, admitted to the Prince Albert Hospital at 1.30 A.M., September 30, 1897.

Illness began 6.30 P.M. September 29, i.e., seven hours before. The child then seemed to be seized with sudden pain, screamed, and soon began to vomit. At 11.30 P.M. it passed blood by bowel.

Child does not look ill. A tumor can be felt crossing the upper part of the abdomen. Under chloroform this tumor was considerably reduced in size by injection, and afterwards a smaller tumor could be felt in the right iliac region. The abdomen was opened to the right of the middle line over the tumor. The intussuscepted part, which was cecum into colon, was easily reduced; a gauze drain was put in and the abdomen was then closed. 11 A.M. gauze drain removed—pulse, 160; temperature, 103. Child looks well.

October 1—bowels well open, motions dark.

The wound suppurated a little superficially, but the child made a good recovery and was discharged cured October 15, 1898.

CASE 3.

Mary Trawley, aged 6 months, was admitted to the Children's Hospital at 10 A.M., November 11, 1897.

History.—Was quite well until November 10 at 11.30 P.M. She then began to vomit green material, and passed a small, dark-colored stool.

After that she had no motion until 7.30 the following morning and then passed nothing but a small amount of blood and slime. On examination, the child is quiet; it looks pale. A tumor can be felt in the situation of ascending and transverse colon.

The child was put under chloroform at 2 P.M., and then

some warm olive oil was injected by means of an ordinary enema syringe. By this means the mass was partially reduced. The abdomen was then opened to the right of the middle line. A double intussusception was found ileum into cecum, and cecum into colon. It was reduced without much difficulty. The appendix had been nipped and was a dark, purple color. It was not removed. Gauze drain introduced; wound closed with silk-worm gut sutures.

November 10.—Drain removed; child very low. Temperature 103°. Has passed two motions.

The child was very ill for a few days, with a high temperature, but it subsequently made a good recovery, and was discharged cured.

CASE 4.

Ronald H. C., aged 2 years and 2 months. Admitted to the Children's Hospital February 21, 1898, at 2 P.M. At 7 P.M. February 20 he complained of pain in the abdomen, threw himself on the floor, and got white; since then he has passed blood and slime frequently from the bowel. At present general condition of the child is good. In right iliac and umbilical regions a fairly large hard mass can be felt. Per rectum, a mass not far from anus, can be felt, and the lumen of the intussusceptum can be distinctly made out.

Under chloroform, after an injection of warm olive oil, which very much reduced the size of the mass, an incision was made in the middle line, beginning just above the umbilicus. The intussusception was delivered and reduced without much difficulty. It was colon only, beginning just below the cecum; wound closed; gauze drain left in.

February 22, 1898.—Temperature, 102; pulse, 160. Not much pain; has passed mucus; no blood.

February 22, 1898.—Had small quantities of morphia hypodermically three times during the night. Temperature, 104 at 10 P.M. (was sponged the night previous); has passed a fair motion; more morphia, as it was still restless.

February 23, 1898.—A partly formed motion; took his food well and slept well.

February 27, 1898.—Has had diarrhea on and off; fed on Benger's food one-third milk. He had a stitch abscess, but he

ultimately made a good recovery and was discharged cured on March 20, 1898.

CASE 5.

Ronald H. C., aged 2 years and 8 months; admitted to the Children's Hospital September 20, 1898, at 2 P.M. This child was discharged cured from this hospital after a laparotomy for intussusception six months ago. The father states that the child was taken suddenly ill that morning with the same symptoms he had on the previous occasion, therefore he thought it best to bring it straight to the hospital again.

On admission, the child does not look very ill; it has been vomiting and passing blood by the bowel. At 4 P.M., under chloroform, a large injection of warm olive oil was given, which seemed to completely reduce the large mass which had previously been felt in the region of the transverse and descending colon. The child was taken back to the ward. On examining the child a few hours later the tumor was found to have returned.

Under chloroform the abdomen was opened in the middle line. The intussusception, which was colon into colon, was easily reduced. A small gauze drain was inserted and the abdomen closed in the usual way.

September 21.—Drain removed; pulse, 140°; temperature, 103; respiration, 46. Passed a natural motion. The child after this made a quick recovery, and was discharged cured in three weeks from the time of admission.

CASE 6.

Stanley B., aged 5 months; admitted to the Children's Hospital October 13, 1898, at noon; mother states that the child began to get ill suddenly the evening previous. It seemed to be in pain, and vomited; passed a large amount of blood that morning; the child looks ill—pulse, 170; temperature, 101°.

A curved and elongated tumor can be felt on the left side of abdomen.

Under chloroform, after a large injection of oil, the tumor was much smaller, and could now be felt on the right side of abdomen. The abdomen was opened to the right of the middle line. The intussusception, which was cecum into colon, was brought outside and was only reduced after considerable

difficulty. The cecum was much discolored, but not gangrenous. Before closing the abdomen a gauze drain was inserted. Child bore the operation fairly well.

October 14.—Pulse, 160; temperature, 103; color, not good. Later on in the day the temperature rose to 105°, and the pulse began to fail. At 2 P.M. it was convulsed, and died two hours afterwards.

CASE 7.

Mary S., aged 5 months, admitted to the Children's Hospital November 22, 1898.

History.—At 8.30 P.M. the previous evening the child screamed and soon after passed a motion that consisted of blood. A good deal of blood was passed in this way during the night.

On examination the child was found to be well nourished; pale; respiration hurried. A tumor can be easily felt in the region of the transverse and descending colon; a mass can also be felt per rectum.

Under chloroform an injection of olive oil was given; this partially reduced the tumor. The abdomen was then opened in the middle line. Directly after this was done the distended coils of intestine escaped and it was impossible to get at the intussusception without allowing these coils to remain outside. When the involved part was delivered it was found to be cecum into colon. The last portion of this was reduced only with the greatest difficulty. So much force had to be used that the serous coat was cracked and torn in several places. The cecum, when at last it uncurled, was very much discolored. The intestines were now quickly returned and the abdomen was closed. The child bore the operation badly. It never recovered from the shock and died in four hours.

CASE 8.

Thomas G., aged 11 years, admitted to the Prince Albert Hospital from the medical out-patients', November 28, 1898.

Had complained of pain in abdomen for three days, chiefly in epigastrium and right hypochondrium; no vomiting, purging, vomiting, or bleeding from the bowels. He has passed natural motions each day since the attack began. On examination a curved elongated tumor can be felt in right hypochondrium; this can be moved and rolled about with ease, and

handling causes but very little pain. At 8 P.M., under chloroform and ether, abdomen was opened in the middle line above the umbilicus. The opening of the peritoneum seemed to give rise to profound shock, and it was some time before the operation could be proceeded with. After the shock had somewhat passed off the mass was brought into the wound and was found to be cecum into colon; it was reduced with the greatest ease. Part of the cecum just at the end of the longitudinal band remained concave after it came out of the colon. This part, too, was thickened, rough, and discolored. On squeezing it gently it gradually became convex, but directly after the pressure was taken off it tended to become cupped again. It was therefore held in its proper shape for some minutes before it was finally returned to the abdomen. The wound was closed in the usual way, no drain being used.

December 12, 1898.—Pulse, after operation, unstable but settled down by next morning to 112; temperature, 100°. No vomiting; no pain. Bowels open by enema twenty-four hours after operation. From this time the boy made a rapid recovery.

REMARKS.

Counting the eight cases I now put on record I have opened the abdomen twenty-seven times for intussusception. The details of the first nineteen are already reported.* Of the twenty-seven cases fifteen recovered and twelve died.

At the discussion on Mr. Barker's paper, at the Clinical Society, December 10, 1897, all the speakers seem to have been opposed to the use of injections in these cases. Why, it is difficult to understand. Because it is quite certain that in a few cases the reduction can be accomplished by this simple and safe means. I personally have been successful in this way with six children.

There are still a few surgeons who are willing to give irrigation a trial if they see the case early. I maintain that whether we see the case early or late we should always inject, even when we know that we cannot complete the reduction by this means.

My reasons are these:

In early cases the intussusception is occasionally completely reduced. In every case, no matter how long standing,

* *Aust. Med. Gaz.*, Sept. 20, 1895, and *Brit. Med. Jour.*, Nov. 6, 1897.

the mass is always reduced to a certain extent and in the gentlest and best possible manner. And so at the coming operation there is less manipulation of the bowels and therefore less shock. It is common to find an elongated tumor extending, say from the middle of the transverse colon to the sigmoid flexure. After the injection we probably find the tumor greatly reduced in size and now on the right side, at the first part of the ascending colon.

In operating now we can open the abdomen to the right of the middle line just over the tumor. This means making a much smaller opening. There is not now any difficulty in reaching the tumor and there is much less trouble in keeping the intestines from getting outside. All this tends toward a favorable result.

In advocating the use of injections I do not wish to be misunderstood. I am quite alive to the importance of not wasting valuable time in these cases. The injection should always be given while the child is under an anesthetic. Before the anesthetic is given the child should be prepared for operation.

If after the injection has been given the tumor can still be felt the abdomen should at once be opened. If, on the other hand, the tumor seems to have entirely disappeared, the child may well be put to bed; but it must be carefully watched and should be examined again by the surgeon in a few hours. If there is any return of the tumor operate without further delay.

The use of injections has been brought into disrepute by the neglect of these simple precautions.

A SECOND CONTRIBUTION TO THE SURGICAL
TREATMENT OF INTUSSUSCEPTION IN
INFANTS, WITH CASES.*

By HENRY HOWITT, M.D.,
Guelph, Ontario.

IN the paper the term "infant" is restricted to those under one year of age. After briefly describing the different varieties of intussusception that occur at any period of life and also referring to particulars in regard to statistics, modes of growth, length of bowel involved, and the severity of the attacks in the varieties, the author states that in the infant we have only the acute forms with which to deal in practice, nay, possibly, only the ileo-colic, which all authorities agree to be the most acute and rapid variety of invagination. It is, he states, the ileo-cecal form *plus* the valve distended and its lumen occluded by the swollen and edematous invaginated portion of ileum which, owing to the tight constriction at the neck by valve, in a manner resembles a well-hammered boiler rivet that no evenly distributed pressure from within can force out. The author believes that many instances of the trouble occur in infants, leading invariably to death, without the true nature of the malady being recognized by the attendant; and that when the facts having reference to this variety of intussusception become generally known, fewer deaths will be recorded from certain bowel affections, and more lives be saved by surgical measures. He has seen seven cases, six of them almost within the past five years, or since his attention was drawn to the subject. Six were in male children; all came from a district, the population of which is under 12,000. He has operated successfully on four, all of whom were under six months of age. A fellow practitioner lost one, owing to an accident during operation. In one case the friends refused operation and death resulted, and one died shortly after the onset, before anything could be done.

*Abstract of paper read before the American Association of Obstetricians and Gynecologists.

The symptoms of ileo-colic intussusception were fully dwelt upon.

In regard to its diagnosis, the author emphasized the importance of the history of the onset, and stated that without it the attendant may be likened to a ship in a storm without helm or compass. In fact, the nature of the onset might suffice to make a diagnosis. The detection of a tumor in the course of the colon left no room for doubt. The condition in this form of intussusception was such as to preclude the hope of recovery by any method short of operative. No time should be lost in trying either bowel inflation or the injection of fluids. They could do no good.

Dr. Howitt's method of operating is as follows: He maintains the temperature of the child by suitable applications to the extremities and body during operation. Rigid aseptic preparations and precautions should be carried out. A median, 3-inch incision, avoiding the high-placed bladder, is made; the small intestines are everted as rapidly as possible, and protected with gauze, which is irrigated with water of suitable temperature. The evisceration allows the obstructed portion of intestine to be brought into view. When, as is generally the case, the invagination has reached the transverse colon, the surgeon cannot bring it out of the wound till the part of the large bowel implicated is disinvaginated. This is accomplished by making pressure on the apex of the intussusception while the intussusciens is pulled in the opposite direction. It is done by grasping the colon close to the apex with hand, and following it up the bowel, step by step, until the colon and cecum are free. The mass is now lifted out of the incision. Then comes the most difficult point, the reduction of the invaginated portion of the ileum. The part is grasped in the hand, and firmly pressed for a few minutes; the pressure is made with the thumbs on the apex, while the fingers surround and support the outer orifices of ileo-cecal valve. The method resembles that used in paraphimosis, only the large bowel covers the part from view. Before returning the intestines to abdominal cavity, the contents which have accumulated in the ileum of above are forced through the affected part into the colon; this proves that the difficulty has been effectually overcome, and insures an early movement of the bowel. Drainage is not necessary. The omentum is spread over the intestines

to prevent adhesion of the bowel to the line of incision. The dressing is covered with oiled silk, the edges of which are sealed with collodion to prevent urine reaching the cut.

The following table shows all the cases of infantile intussusception he has seen, with particulars:

Initials of Patient.	Sex.	Age.	Date of Attack.	Treatment.	Attendant or Operator.	Date of Operation.	Result.	Date of Death.	Remarks.
W. C.	M.	2 m, 28 dys.	July 2, '88	Oper'n	Self.	July 4	R.	.....	Left Hospital 10th day.
B. W.	M.	5 m, 15 dys.	July 17, '93	Medic'l	Dr W.O.S.	.....	D.	.....	P. M. proved diagnosis.
F. L.	M.	5 m, 27 dys.	Apl. 20, '94	Oper'n	Self.	April 21	R.	.....	Left Hospital 10th day.
— B.	F.	4 months.	Mar 31, '97	Oper'n	Dr W.F.S.	April 2	D.	Apl. 2	Death due to accident during operation.
J. McT.	M.	5 m, 20 dys.	Sep. 17, '97	Oper'n	Self.	Sept. 17	R.	.....	Left Hospital 10th day.
J. C.	M.	6 months.	Nov. 2, '97	.....	Self.	.....	D.	Nov. 2	Died within two hours of onset from convulsions.
C. W.	M.	5 m, 20 dys	Apl. 20, '98	Oper'n	Self.	April 20	R.	.....	Tumor present. Left Hospital 10th day.

DISCUSSION ON DR. HOWITT'S PAPER.

Dr. CHARLES A. L. REED, of Cincinnati, O.—That the essayist should have encountered a singularly large number of these cases in the comparatively restricted community in which he practices, is at once a compliment to his own diagnostic ability and a reflection upon the oversight of those who pass these cases by unrecognized. At least, this is the uncomfortable thought it leaves in one's mind. I am impressed with his recital of the symptomatology of these cases, and I am convinced that much is to be learned by a careful study of that feature of his contribution.

Another point that has been impressed upon me by the doctor's experience is that these young cases are far much safer candidates for surgical interference than is ordinarily supposed. A popular impression prevails with the profession that the extremes of life offer but little resistance to surgical interference, and yet my own experience, limited as it has been in the abdominal surgery of infancy and childhood, impresses me that we may proceed much more confidently, regardless of the factor of age, than we ordinarily suppose. While the doctor had some remarkably successful experi-

ences, after delays in these cases, I am convinced that, perhaps as a class, we have no cases that so impress us with the importance of early and timely interference. I would that I could bring to this discussion and experience that would be instructive.

My operative work in this class of cases is restricted to but a single case, and that case was operated upon after nearly forty hours of stercoraceous vomiting, and with the child *in extremis*, and unhappily the child died within the first five hours following the operation. But while this result was realized, it only impressed me with the importance that early interference might have brought about a different outcome, and that delays are exceedingly dangerous. I believe the profession in America is under a distinct and special obligation to the distinguished essayist for his contribution to the literature of this subject, and personally I thank him for having presented his paper to this Association.

Dr. JOSEPH PRICE, of Philadelphia.—Dr. Reed, in his closing remarks, has expressed something very important in this connection. Lack of knowledge on the part of the general practitioner is wholly responsible for a great many deaths following invagination in infants. Both the general practitioner and general surgeon are to blame in many cases for the eleventh hour operations. Such contributions as this ought to be published in journals that are read by the general practitioner, and not in special journals. Unfortunately we, as an Association, are not as much educational as we think we are. Too many valuable contributions of this nature are simply published in our transactions, and their circulation limited to 150 members. If we can educate the general practitioner to a more precise knowledge of diagnosis, the results will improve the world over, and the lives of many of these little sufferers will be saved. This paper is a beautiful demonstration of what one man can accomplish by diagnostic skill, good judgment, and early operative interference.

Dr. W. E. B. DAVIS, of Birmingham, Ala.—I want to endorse what has been said by Dr. Reed and Dr. Price. I must confess that the experience of Dr. Howitt is very exceptional, just as we have these exceptions in our professional work. It

is very unusual for one man to encounter in his practice as many cases of invagination in infants. I have only met with one case in my work, and this came under my observation about ten days ago, the child, a male, being 8 months old. I do not think there is that neglect in making a diagnosis by the general profession that we are led to believe by the remarks of Dr. Reed. I do not think invagination is such a common condition in infants. But, certainly, early diagnosis and timely operative interference will cure these cases. I suspect that the experience of the Fellows has been similar to mine, namely, that in the majority of cases in which we are called to operate for obstruction of the bowel we find peritonitis. I have found very few cases of mechanical obstruction of the bowel in my experience. It is true a large number of cases of obstruction of the bowel have been reported in years past; many of them were not operated on; autopsies were not made, and I have no doubt that a great many of them were cases of peritonitis. The doctor's experience is unique, and his paper is peculiarly interesting for that reason. His treatment is good, and he is to be congratulated on the results.

Dr. RUFUS B. HALL, of Cincinnati.—I rise to congratulate Dr. Howitt on his paper and his excellent results. Like the last speaker, I feel that the doctor has had more than his share of cases of intussusception in a few years. But I do not want to go on record as saying that these cases do not occur in every man's practice more frequently than is generally believed. Since listening to the paper, I can recall in sixteen years's general practice not less than half a dozen cases of children, under one year of age, that had come under my observation and care with intestinal obstruction. I can recall three or four cases, seen in consultation, dying from intestinal obstruction during that period. That was before very much work was done in abdominal surgery, and long before I commenced to do any myself. I have learned to believe that when we are called in consultation to see a child that has anything the matter with it, calling attention to the abdomen, the first thing to think of is intussusception. I am not ready to accept the statement that we have here twelve cases of intussusception in five or six years in a city or district whose population is only 12,000. I do not believe that occurs all over

this country. I believe the essayist is correct in the general supposition that the condition is overlooked in the vast majority of cases until the children are practically dead. I believe the paper will do a world of good. Early diagnosis is worth everything to the child and to the operator.

Dr. JOHN M. DUFF, of Pittsburg, Pa.—My experience leads me to believe that intussusception occurs much more frequently than perhaps many think it does. I have had the opportunity of holding post-mortem examinations upon several cases where the diagnosis was in doubt. I speak from memory now, because I did not expect to say anything on the subject, but in two of the cases there was a difference of opinion on the part of the consultants, but intussusception was found to be present at the post-mortem. I have within the past year had two cases, in one of which I was refused operation, but secured permission to make an autopsy, which was done, and an intussusception of several inches was found. I was permitted to operate upon the other case, but it was too late, as peritonitis had already set in. The child died.

One point occurred to me during this discussion that I desire to speak of. It is an experience that I will give you for what it is worth. A certain family, a few years ago, had a baby a little less than a year old that died with what was presumably obstruction of the bowel. The next baby, at about the same age, was taken sick in the same way, and died in the same manner. I was not the attending physician, but I saw the second child just before death occurred. A third child took sick in the same way. I was called on that occasion, diagnosed obstruction of the bowel, suggested operation, but it was refused. The patient died, an autopsy was made, and my diagnosis was verified as intussusception.

Here is a very singular circumstance that occurred in the same family. I was called to see a young man, 23 years of age, who was suffering from typhoid fever. He also had obstruction of the bowel, and died. There was no autopsy in this case, consequently I cannot say what the conditions were. All of these cases occurring in the same family are worthy of record.

Dr. CHARLES GREENE CUMSTON, of Boston.—I have had no personal experience with intestinal obstruction in infants, but

when I was an assistant at the Hospital for Women and Children in Geneva I saw four cases of infants which had the characteristic symptoms of acute intestinal obstruction, but they all recovered. In another case, in which a diagnosis of intestinal obstruction was made and operated upon, there developed subsequent to the operation tuberculosis of the sigmoid without any obstruction.

Dr. HOWITT (closing the discussion).—I am very much pleased with the free discussion that my paper has brought forth. I feel that it is not the education of surgeons in this matter, but the education of the general practitioner to diagnose the cases of intestinal obstruction in infants early. Unless this trouble is diagnosed early, the surgeon is of no avail whatever. It appears to me that the diagnosis is so simple, that with care the general practitioner can diagnose these cases early, so that the surgeon can resort to timely operative interference.

I am very thankful to Dr. Reed, Dr. Price, and others, for what they have said, and I trust that it may lead to the general practitioner becoming more familiar with this subject. When this is done, as I stated in the concluding part of my paper, fewer cases of death will be recorded of ileo-colitis and gastro-enteritis than there are to-day. It is very singular, indeed, that in our section where I have spoken to my friends about intestinal obstruction in infants and pointed out the important symptoms that I, in practicing in a city of less than 10,000 inhabitants, should have had more cases of this condition than any other man in the world. I believe within a short time, when more attention is paid to intussusception in infants, it will be found to be very important indeed.

A CASE OF CONGENITAL DISPLACEMENT OF THE SCAPULA.

By J. E. VIRDEN M.D.,
Westchester, New York City.

DURING the Summer of 1897 the father of the patient hereafter described called on me to ask concerning a "lump" which a relation had discovered on his little girl's shoulder while dressing her. At my suggestion the patient was brought to my office a few days later, and on careful examination of her shoulder I found a condition to which I could not give a name satisfactory to myself. The parents could give no history of injury, illness, or anything causative. In fact they never suspected any deformity in their child until the enlargement between the neck and the point of the shoulder was pointed out by a relative, although when I pointed out the various deficiencies, compared with the opposite side, they readily noted them, and expressed surprise at not having seen them before. During the next few weeks following my first examination I presented the child to two meetings of medical men, where she was examined by many, and the opinions expressed were almost as numerous as the examiners. My advice to the parents was that they should carefully watch the case for developments, reporting frequently while I should watch medical literature for suggestions.

The first suggestion of importance to this case, that I received, was from PEDIATRICS (September 16, 1898), which on pages 285-6 gives an abstract from *Munch. med. Wochenschr.*, (1897, xliv., 1471), of the twenty cases of "Congenital Displacement of the Scapula," reported up to that date.

In November, 1898, in the presence of the parents and my friend, Dr. C. S. Burnside, of Cochranon, Ohio, I made the following notes of this case:

Florence I., a robust appearing, well-developed girl, who is now 10½ years of age; she has never had any sickness except whooping cough. As before related an aunt first noticed a "lump" between the neck and point of the shoulder on the

left side. This lump, on examination, proved to be the upper portion of the scapula, which is raised *1 inch* above the right one, but with the lower angle nearer the spine than the upper. The entire inner border of the left scapula is nearer the spine than the right. The left scapula is smaller than the right (left $5\frac{3}{4}$ inches, and right $6\frac{1}{4}$ inches, perpendicularly). The neck of the left scapula is larger, but probably not shorter than the right. The left clavicle is straighter and about *1 inch* shorter than the right, while its distal end is elevated to correspond to the location of the scapula. The upper thoracic portion of the spine has a regular curvature with the concavity to the diseased side (left). There are no exostoses present, but the left coracoid process is larger than the right. All the muscles of the left shoulder and arm are smaller than those of the right. The patient was able to elevate the right scapula much more than the left. All other motions of the left scapula were more limited than those of the right side. The movements of the left arm below the horizontal were but slightly restricted, but above the horizontal the deficiency was very pronounced. The left arm is $\frac{1}{2}$ inch shorter than the right, and its axilla is decidedly deeper than the opposite. The left arm is *1 inch* nearer the spine than the right.

Photographs and the electrical reactions of the muscles were not taken because of want of necessary apparatus.

I have observed this case for eighteen months and found no change for better or worse.

After these observations, and a reasonable perusal of the limited literature on the subject, I have become fully convinced that I have to do with a case of congenital dislocation of the scapula (Sprengel's disease).

I can find nothing in my case to enlighten us as to the cause of this rare deformity.

EDITORIAL COMMENTS

Extraordinary interest is now being taken in almost every part of the world in consumption, and the means whereby to stay its course, or may be, happily, to wipe it out altogether. That the disease is infectious is, of course, a matter upon which all scientific men are agreed, although opinion still widely differs as to its degree of infectiousness. Some go so far as to assert that tuberculosis is directly communicable while others scoff at the idea, and contend that soil, environment, and personal predisposition are the main factors in aiding its spread. However, that it is infectious under certain conditions has been conclusively proven, and this being so, it is right that every practicable measure should be enforced in order to narrow its scope. Many writers have recently charged the public schools as responsible in a large number of instances for the dissemination of the tubercular germs. Dr. J. M. Emmert contributed a paper to the annals of Gynecology and Pediatrics, in which he drives home this point in a forcible manner. He declares that many of our public schools as now conducted are veritable "black holes" where the children are dying of auto-intoxication, and goes on to say that there could not be found a better culture bed for the tubercular germs than in these children debilitated and with tissues starved through breathing devitalized and vitiated air. Attention has often been called in PEDIATRICS to the unsanitary state of many of the school buildings. Parents and children have a right to demand that their studies should be pursued under healthy hygienic conditions. Ventilation is too frequently woefully defective in schools. It is impossible to ventilate rooms in which are gathered for several

hours in each day a mass of human beings, by means of windows and doors only. Mechanical methods should be provided to ensure a plentiful supply of fresh air. This is a matter which might with advantage receive the earnest attention of those who are striving to put an end to the scourge of tuberculosis.

Testing Children's Strength The old careless methods of bringing up children has passed away, and their lives are now regarded as worth saving. It is no longer a case of "a survival of the fittest." The belief in civilized countries is that every child, however weakly, should be given the chance to develop into a more or less useful member of the community. This being the spirit of the age, it is somewhat curious that more care is not taken of the health of children when at school. We have just referred to the lack of good hygienic arrangements in many of the public schools, and will touch on another no less important point—that of over-pressure. The possession of knowledge is very excellent, but if in its pursuit that much more valuable possession, good health, is lost, where is the profit. Mrs. Lew Wallace, in a recent issue of the *Ladies' Home Journal*, writes an able article in reprobation of the present pernicious system of overloading the brains of young children, and in Chicago the "bull is to be taken by the horns," and measures are in progress to decide as to the mental capacity and physical condition of the pupils in its public schools. The *Scientific American* for February 18th says: "A scientific investigation of the physical strength of the Chicago school children is to be undertaken by the Board of Education of that city, and the results which they obtain will be used as a standard as to their capacity for mental endurance and physical exercise. The theory of the test is to determine what is known as the 'fatigue period' of a child, or that period of its life at which its energies are at the lowest ebb, and therefore

the time when its school work should not be pressed. The scheme will be put into operation at one of the largest elementary schools in which at least one thousand pupils are taught. The pupils will be weighed and measured, and will be examined for the purpose of determining their physical condition. The results of these investigations should be instructive, and the Chicago experiment will be watched with interest by "pediatrists" everywhere.

In PEDIATRICS of a few weeks ago we
New Views in Pneumonia made some remarks upon the bacterial origin of pneumonia, but since that article was written an altogether new theory has been promulgated as to its cause. Dr. Andrew H. Smith has contributed an article on croupous pneumonia to the sixteenth volume of the Twentieth Century Practice of Medicine just published, in which he states, as his opinion, that the disease is not an inflammation of the lung. He takes this ground for the reason that it does not affect the structure of the organ. He contends that it is a process of germ culture, in which the pneumococcus grows in a culture medium supplied by the functional capillaries of the lung. According to Dr. Smith, the cause of pneumonia lies in the double circulation in the lungs. The gist of the argument, as stated in Twentieth Century Practice of Medicine, is that from its peculiar construction the lung is enabled to afford a field for bacterial culture and to supply a culture medium, and this without calling upon its own nutritive resources or directly compromising its own tissues. It is the fact that in the lung are empty spaces, accessible to bacteria and separated from an unlimited blood supply by only the thinnest and most permeable walls that makes the phenomena of pneumonia pos-

sible. It is the further fact that the framework between these spaces has its own separate blood supply, apart from the vessels involved in the pneumonic process that prevents a sweeping destruction of the lung tissue. In no other organ of the body is such a mingling of structural health and diseased action conceivable, for in no other organ is the blood supply for nutrition and function separately provided for (except in the heart, where a somewhat analagous condition is met with). In speaking of the phenomena of crisis. Professor Smith gives the following new deductions: That normally there is carried in the functional capillaries a varying amount of sodium bicarbonate, held in solution in the blood. It is requisite that the carbon dioxide contained in the bicarbonate should be set free in the lungs, in order that it may escape with the expired air. Nature provides for this by the production of a special organic acid, known as pneumatic acid. This combines with the sodium, and the carbon dioxide thus liberated passes into the alveoli. But when the functional circulation ceases, the sodium bicarbonate is no longer at hand to neutralize the pneumatic acid, which continues to be produced as a part of the nutritive process. The parenchyma of the lung therefore becomes saturated with a free acid, and the slightest trace of acid in the medium is, as has been proved from laboratory experiments, fatal to the propagation of the pneumococcus." Taking this view of the pathology of pneumonia it follows, as a natural sequence, that a more or less radical change in ideas as to treatment must also take place. The larger portion of Professor Smith's monograph deals with treatment. However, it will be sufficient to state the principle thereof without entering into details. It is plain, holding the opinions of Professor Smith in regard to cause, that therapeutic measures should be directed solely to the arrest and destruction of the germ, and this is the course recommended. Although pneumonia in childhood differs to a certain extent from the dis-

ease as found in adults, the foregoing views as to cause will apply to those of both mature and of tender age.

Bicycling for Children

The time is fast approaching when once again the hum of the wheel will be heard in the land, and therefore a few remarks on the benefits and drawbacks of this particular form of exercise for children will be seasonable. Bicycling for anyone who is sound in wind and limb, when not carried to excess, is beneficial, and the same may be said concerning wheeling for children above a certain age. But the practice which unfortunately came into vogue last year, of allowing and encouraging infants to ride, is a most reprehensible one and calculated to do infinite harm. The *London Field* has this to say on the matter: "A most pernicious practice has sprung up of encouraging very young children to ride the bicycle, and certain people have appeared to vie with each other as to which should produce the youngest rider. To such an extreme has this senseless competition been carried that in the United States a baby of 18 months was taught by his father to steer and propel a diminutive bicycle. The child has now been riding for over a year, and has done as much as four miles at a stretch. Its case came under the notice of Dr. Elliott, who made a communication on the subject to the New York Academy of Medicine. The child was just over 3 feet high, weighed 31 pounds, and rode a machine weighing 11 pounds geared to 46 inches and driven by 4-inch cranks. In making some critical remarks on the case, Dr. Elliott said that he considered that at an early age the bones were soft and the ligaments undeveloped and unfitted to stand the special requirements of riding a bicycle, and the result might be as in this instance, a reduced ligamentous system. He also gave it as his opinion

that bicycle riding tended to disproportionate the legs when compared with the arms." An instance like the foregoing is nothing less than pitiful, and seems almost a case for legal interference. Another form of riding to which a stop should be put is that of small boys and girls riding bicycles in the crowded streets of a city. The practice is not only dangerous to themselves but to other people.

Correction

In our editorial of March 15th, p. 260, there are some misprints, some of which should be corrected. We meant to say: "As we are only now emerging from the state of childhood in the evolution of medical education, we should perhaps not expect pediatrics to take a high rank amongst the acknowledged branches of learning in our medical schools." And: "The first special clinic was established in the New York Medical College in 1860. It died with the college in 1865."

BOOK REVIEWS

FORMULAIRE D'HYGIENE INFANTILE. Collective hygiene de l'enfant à l'école, à la crèche et à l'hôpital par le Dr. H. Gillet, ancien interne des hôpitaux de Paris, chef du service des maladies des enfants à la polyclinique de Paris. Avec 74 figures intercalées dans le texte. Paris: Librairie J. B. Baillière et fils, Rue Hautefeuille, 19, près le boulevard Saint Germain. 1899.

This little book deals with the steps to be taken to preserve the health of children when well and with the precaution to be observed when ill. In fact, as its title denotes, it treats generally of the hygiene of childhood collectively as well as individually. As Dr. Gillet remarks in the preface: "The fight against disease, and especially against infection with the micro-organism, fits in with other measures. Thus side by side with individual infantile hygiene, collective infantile hygiene seems an indispensable complement. Therefore the mission of physician at the crèche at the hospital in fact in any place in which infants are massed together in large numbers is to prevent the spread of disease." The subjects treated in this work are arranged as follows: The general prophylaxis of contagious maladies is given in detail. Isolation and disinfection based on hygiene are thoroughly dealt with. Special prophylaxis of contagious complaints follows. School hygiene is made the subject of the next four chapters and is discussed in all its bearings. The hygiene of "crèches" and children's homes is written upon in a most interesting and instructive manner and is well worthy a close study. Dr. Gillet particularly insists upon the paramount importance of choosing a healthy locality when intending to open or erect a "crèche." He also points out that the smaller the "crèche" is the better it will be for the health of the infants. Rather two small "crèches" than one large one. The last portion of the work is devoted to a consideration of infant's hospitals, in which all the most modern ideas on the subject are recapitulated together with valuable suggestions, with a view to render these institutions more healthy than is, as a rule, at present the case. The book is small, teeming with useful information and advice, and contains seventy-four wood cuts. We question whether the French plan of publishing a series of small handy volumes, each one given up to a special subject, is not preferable to the custom practiced here and in Great Britain, of lumping the whole of the matter in one or two large and often cumbersome volumes.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE.

Stated Meetings, March 3 and 9, 1899.

WILLIAM H. THOMPSON, M.D., Chairman.

The Stigmata of Syphilis in Children.—Dr. R. H. M. DAWBARN read a paper with this title, in which he gave the results of his efforts, for some years past, to collect from acknowledged authentic sources the various diagnostic signs of inherited syphilis. He said that next to the well-known "old-man appearance" of syphilitic infants might be placed a peculiar sallowness of the skin in such infants. Several authorities point out that an extremely thick and long umbilical cord, unusually slow in separating from the umbilicus, is an indication of inherited syphilis. Syphilitic pemphigus generally occurs in the form of large bullæ or blebs, and in this form it is almost invariably fatal. The vesicular form is not quite so severe. Perhaps the most common sign was the erythema, which appears on the lower part of the abdomen about three weeks after the birth of the child, but it should be remembered that in only about 25 per cent. of cases of inherited syphilis is any eruption observed. The catarrhal condition of the nose, significantly described as "snuffles," is highly characteristic. Condylomata sometimes appear early at the muco-cutaneous borders of the orifices of the body. When there are no mucous patches, a general stomatitis may give one the clew to the true nature of the case. Occasionally one observes a desquamated condition of the tongue, having a peculiar configuration. A distinguishing sign between congenital and acquired syphilis is the general enlargement of the lymph nodes found in the acquired form. Hemorrhages from either sound or ulcerated mucous membranes generally indicate syphilis. The occurrence of pneumonia in an infant at birth, or very shortly thereafter, was quite suspicious of syphilitic infection. A peculiar form of keratitis, known as "ground-glass cornea," was perhaps one of the most characteristic of the eye

lesions found in syphilitic infants. This naturally reminded one of Hutchinson's famous triad of symptoms—notched teeth, ground-glass cornea, and otitis media. A rapid alopecia might occur in either the inherited or acquired forms of syphilis. Among the rarer signs was a painless orchitis. An early and common sign was the occurrence of osteochondritis of the shafts and epiphyses of the long bones. It was usually observed at birth, or during the first month. A little later syphilitic periostitis was observed, particularly that variety manifesting itself by the formation of bosses about the fontanelle. The finger nails often presented evidence of the ravages of syphilitic onychia. The first or temporary set of teeth are usually cut early in syphilitic infants, and soon decay. The peculiar pegging and notching of the incisors, known as "Hutchinson's teeth," were only observed in the permanent set. In addition to the signs already mentioned, there were various deformities of the nose and irregularities of development in the bones of the leg.

Syphilitic Affections of the Liver in Adults and in Children.—Dr. J. GEORGE ADAMI, of McGill University, Montreal, presented a communication on this subject. He stated that in about 90 per cent. of the cases of congenital syphilis the liver was affected, the infection having taken place through the placenta. The chief lesions met with in the syphilitic liver are: (1) Well-formed gummata; (2) miliary gummata; (3) miliary gummata and a general fibrosis of the whole organ; (4) generalized atrophic cirrhosis, not associated with gummata, but accompanied by icterus. He thought it highly probable that in the effort to excrete the toxins the liver cells underwent such an intense parenchymatous change as to result in the death of the cells, and subsequent fibrosis. Syphilis of the liver generally shows itself by granulomatous deposits or by interstitial fibroid change. The specific granulomata may be in the form of minute multiple gummata or of large isolated gummata, but it was impossible to regard the one form as secondary and the other as tertiary. Dr. Adami said that, so far as he knew, no thorough study had been made of the visceral changes occurring in the post-natal form during the period of secondary manifestations. Jaundice was not uncommon in secondary syphilis, and he was inclined to look upon it as an indication of the functional disturbance

in the organ resulting from the effort to excrete toxins. The large gummata were the most characteristic of the syphilitic lesions of the liver. Fibroid pittings and similar evidences of the former presence of gummata were often met with in persons who had for years previously presented any evidence of syphilis. In congenital syphilis generalized fibrosis predominates; in the adult the granulomatous changes are the most prominent. The fact should not be lost sight of, that it was impossible, from a study of syphilis of the liver, to draw any distinction of anatomical importance between secondary and tertiary lesions.

THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting February 14, 1898.

The President, Dr. EDWIN E. GRAHAM, in the Chair.

Dr. H. M. SHRINER read a paper on **An Easy Method of Milk Modification.**

DISCUSSION.

Dr. EDSALL.—I think it is well to direct attention to the fact that we are, in many cases, particularly when dealing with poor dispensary patients, whose milk is always of uncertain quality, calculating upon too high percentages. This is especially the case with the proteids. The amount of fat is a simpler question because cream is commonly used, and there is more variation in the actual amount of cream than in its percentage of fats when it is obtained by the same method of separation. But the proteids must be reckoned blindly in ordinary work, and they vary to a very large extent, sometimes almost 100 per cent. In doing metabolism work I have made daily estimations of the proteids of the milk from one dairy for as long as two months, using the Kjeldahl method for nitrogen. In that time the milk sometimes varied within twenty-four hours from 4.1 per cent. of proteids to 2.7 per cent., rising on the following day to 4 per cent. once more. Such variations occurred even in Winter time when the cattle are given a regular fodder; in the Spring, especially when they are fed largely upon fresh grass, the daily variations are so great that calculations based upon any fixed percentage are very uncertain; but it will almost always be found that the proteids are below the commonly accepted 4 per cent. The variations in the amount of

fat in the milk itself are quite as great though, as I said, of less importance, as a rule, because the fats are obtained chiefly from cream. I have, however, seen the fats of milk vary in a series of daily estimations from 3.2 per cent. to nearly 6 per cent. I have no desire to question the value of Dr. Shriner's method of calculation, and simply wish to emphasize the point he made, that the percentages of proteids and fats commonly used as the basis of calculation, are, in most cases, likely to be too high.

Dr. THOMPSON S. WESTCOTT.—It may be interesting to observe that the method of calculation suggested in Dr. Shriner's paper is the same as that which has long been used by the Walker-Gordon laboratories. Any method of calculation involves the application of the same fundamental arithmetical principles, which are quite simple. Dr. Shriner is to be commended for independently reaching the results he has presented; but I doubt whether the members of the Society will consider this method simpler or more readily applied in practice than several other methods that have recently been suggested.

Dr. SHRINER.—I would say that I have selected these percentages as standards; any percentage can be taken as standard, and worked out by the same rule.

Dr. J. P. CROZER GRIFFITH exhibited the "materna," a new and simple apparatus for the home modification of milk, designed by a New York dealer in glassware and surgical apparatus. It consists of a glass graduate so marked that by putting into it the different ingredients of a milk mixture, up to the different horizontal lines cut in the glass, mixtures of different percentage strengths can very readily be produced. He recommended the apparatus highly, as it costs but little and saves much trouble.

Dr. MILLER.—It seems to me that this apparatus is very valuable because of its simplicity. I have found that the percentages of ordinary cream are so uncertain that it has been my custom in home modification of milk to direct parents and nurses to adopt the gravity method, i.e., to allow milk to stand varying periods of time and then take off varying quantities of the upper layer and mix that with varying quantities of

sugar and water. This has seemed to me a simpler method and to answer all purposes. This apparatus would simplify that method still further, and it seems to me, would be a very valuable addition to our armamentarium. This brings up the whole question of modification of milk. I believe, as Dr. Jacobi has so long taught, that the simpler a method of feeding is, the more successful it is likely to be. The home modification of milk is utterly impossible among the poor. They cannot get the cream, often not even the milk, nor can they keep them fresh. Thus, it seems to me, the older method of mixing milk with barley water and sugar is a good method, directing always that the milk be boiled. But for those who can afford to use the laboratory it has been a wonderful addition and the means of saving infant life and preventing disease.

Dr. WESTCOTT.—When Dr. Griffith showed me the apparatus I hastily worked out several formulas, and found that in order to make the required percentage of fat a 20 per cent. cream with a 4 per cent. milk was necessary. If they were used the result was quite accurate. The proteids were practically exact within a few decimals of a hundredth of 1 per cent. It is rather difficult, as Dr. Griffith has said, to get a 20 per cent. cream, and it seems to me that the apparatus would have been of more general utility if it had been graduated on a basis of 16 per cent. cream, which can be very readily obtained at any of the laboratories and more nearly approximated by an ordinary fairly rich cream from the common dairy.

Dr. E. E. GRAHAM.—Is this absolutely correct? For instance, if you fill the graduate to a certain distance with the specified proportions of water, cream, milk, and sugar, will it work out according to the percentages given; are you sure that it is correct?

Dr. GRIFFITH.—In answer to Dr. Graham's question I would say that all the markings are scientifically accurate, and that each glass is tested before it is put on the market.

Skiaograph of the Lower Extremities of an Ectromelus exhibited by Dr. R. A. CLEEMAN.

At a recent meeting of the Society I reported a case of ectromelus which had occurred in my practice. I described

the monster as wanting the femur on either side, but you will see from this very satisfactory skiagraph of the lower extremities, for which I am indebted to Prof. H. Augustus Wilson, that it is the bones of the legs that have failed of development and not the femur. There is discernible but one bone in each extremity from the pelvis to the foot, and this bone bears the shape of the femur. The head can be made out in proximity to the pelvis and below the contour is like that of the condyles, though it also resembles the trachea formed by the two bones of the leg; below the distal extremity are two centres of ossification which I take to be in the astragalus and os calcis respectively, such as we might expect at this period of the child's development. The skiagraph is an excellent example of what we may learn through the Roentgen ray before death allows us the opportunity of dissecting, an event which may not occur in this case until late in adult life.

Dr. GRIFFITH: I spoke somewhat incorrectly when I referred to the use of 20 per cent. in the apparatus. The circular which accompanies it calls for skimmed cream, which cannot be expected to average more than 16 per cent. The measurements on the graduate, however, clearly demand a 20 per cent. The correction on the circular is about to be made by the makers. For myself, in prescribing a milk mixture, the method I prefer is to work out the desired percentages and quantities just as they are needed, without any special apparatus. There are many physicians, not constantly calculating milk mixtures, who will find this difficult, and for such this apparatus is really a boon.

As originally made, it was marked with certain weeks and months, indicating the age at which food was to be changed to a stronger mixture. I have felt this to be a distinct mistake, since it places unwisely too great a power in the mother's hands. It is wrong to teach the laity that a child's food is to be increased in strength, just because it happens to be 3 or 6 months old. This is a very arbitrary plan, and capable of doing great harm in unskilled hands. The makers of the apparatus have therefore agreed to construct one model of it without such markings for different ages.

PRACTICAL NOTES

A Contribution to our Knowledge of Diphtheria.—

HENNIG, in comparing two epidemics which occurred previous to the antitoxin period—1890-91, in a village near Tübingen, and 1893-94 in Tübingen proper—lays stress on the fact that in the first epidemic, presenting much more favorable surroundings, numerous cases appeared in 41.4 per cent. of the families, while in the latter only 11 per cent., with an even higher mortality occurred, although the surroundings were less favorable. He points out, in this relation, how careful we should be in judging of the effect of inoculation of diphtheria antitoxin as a preventive measure. The question of immunization, especially when we consider the short time in which the so-called immunity of dwelling houses against diphtheria is active, must not be answered hastily.—*Munch. Med. Wochenschrift.*

Stomatitis.—

℞ Natr borac. 4.0 (1 drachm).
Tinct myrrh. 8.0 (2 “).
Syr. moror. 60.0 (15 “).

M. Sig.—Use as mouth wash.—*Der Kinderarzt.*

Fissures of the hands.—

℞ Menthol. 0.5 (7.7 grains).
Salol.
Olei olivæ. 1.0 (15.4 grains).
Lanolin, Liebreich ad. 100.0 (3.2 ounces).

M. Sig.—External use.

Antipyrin and Lactophenin in Pediatrics.—FAJIO has, after a number of experiments, arrived at the following conclusions; The two drugs named cause a lowering of the temperature in apyretic children, which at times is quite considerable (after antipyrin to 2.0 c, after lactophenin 1.9). A reduction of the temperature occurs more certain and more

rapid from moderate doses of lactophenin than from antipyrin. The lowered temperature is maintained when either of the two drugs are used continuously for six hours: after this the temperature gradually rises again, without the occurrence of chills. The influence of the drug is noticed in the pulse and respiration, contemporary with the reduction of temperature.

Antipyrin, in a moderate degree of hypothermia, causes disturbances on part of the respiration, the circulation and the nervous system. so that we meet on the whole with the picture of collapse. The same may be observed after lactophenin. It is, however, necessary to administer larger doses of this remedy than those which are sufficient to produce hypothermia, to observe these symptoms of collapse, and the latter are also of a slighter degree.

The clinical symptoms which point to an intolerance of the remedy are: a general condition of depression, pulse small, rapid heart sounds, weak respiration, increased pallor of the face, profuse perspiration, sleepy condition, apathy, mydriasis, anorexia. No disturbances on part of the digestive system or the skin have been observed. In only one case did the urine show albumin" after the administration of large doses of lactophenin. A slight degree of hemoglobinuria, on the other hand, has always followed the administration of lactophenin, which, however, always disappeared within twelve hours. The maximum dose of lactophenin in children below one year of age may be considered 0.10-0.40, in older children as high as 0.80, never, however, exceeding one gram. (15.4 grains). Antipyrin maybe given in slightly larger doses.

Finally, Fajio reaches the conclusion that antipyrin is to be preferred in pediatrics for its analgetic and anesthetic powers; lactophenin for its antipyretic properties.—*La Pediatria*, 1898. V. 5, *Wien. Med. Blätter*; 1898, xxi., 478.

Contribution to Poisoning With Bromoform.—REINACH has gathered sixteen cases, nearly the whole number of all cases of bromoform poisoning reported in literature. The age of the patients varied between three months and five and a half years, while the amount taken at one dose lies between 15 drops and 6 grm. (1½ drachms). All the children, with the exception of one, have recovered. The duration of narcotism varied between ten minutes and five hours; there could not,

however, be recognized any direct connection between the length of the narcosis, and the amount of bromoform causing the poisonous symptoms ingested.

The symptoms of poisoning are as follows: Shortly after the bromoform has entered the the stomach, consciousness is disturbed, the children become unsteady on their feet, the head falls forward on the breast; the face becomes pale, the lips cyanotic. The pupils remain in an unyielding myosis, devoid of any reaction. The muscles are perfectly relaxed; the head, arms, and legs hang by their own weight, the masseters only are, as a rule, strongly contracted. The integument is cool to the touch; the reflexes, as well as the sensibility and consciousness of pain are totally obliterated. Respiration is shallow, frequent, occasionally intermitting; individual cases presented tracheal râles and bronchial sounds. The heart's action is severely and dangerously influenced. The radial pulse can hardly be recognized or is absent altogether; the cardiac sounds are weak, irregular, accelerated, nearly inaudible. The expired air is intensely charged with the odor of bromoform. The urine shows the presence of bromine.

The first and longest toxic influence, therefore, is exerted on the sensorium, next the respiratory center is involved, and lastly the effect on the heart makes its appearance. Bromoform, therefore, seems to exert its powers principally on the cerebrum and next on the medulla oblongata.

Accordingly our attention should, in the first instance, be directed to the heart and lungs, in poisoning by bromoform. Other therapeutic measures should be directed to the symptoms as they occur.—*Therapeut. Monatsh.*, 1898, xii., 404.

ABSTRACTS

A CASE OF PURULENT SINUSPHLEBITIS AND CIRCUM- SCRIBED MENINGITIS, FOLLOWING CHOLESTATOMA OF THE MIDDLE EAR, CURED BY OPERATION.

W. LINDT (*Correspondenzbl. f. Schwetzer Aerzte*, 1898, xxviii., 399).

This case, concerning a boy $4\frac{1}{2}$ years of age, was presented to the Medic.-pharmac. Bezirksverein Bern (8, ii., 1898):

The patient suffered with an acute otitis media purulenta and mastoid abscess, three years ago; the latter was cured by a simple operation, and the child was dismissed from treatment, notwithstanding the continuance of the otorrhea.

On December 17, 1897, the boy was suddenly taken ill with fever, pain in the throat and the left ear, and behind the ear. The affection was at first thought to be diphtheria, as an epidemic of the latter disease at this time prevailed in the town.

This was followed by chills and somnolence.

Ten days after the beginning of illness the patient came under Lindt's observation. A diagnosis was made of chronic fetid otitis with cholesteoma, complicated by purulent sinus phlebitis and commencing pyemia. General condition very poor; emaciated; the mind somewhat clouded; delirium, however, absent, as were also symptoms of irritation on part of the cerebral nerves; commencing rigidity of the neck muscles marked, pyemic fever. Pulse over 100; intense headache; moaning; jactitation; disgust for food; edema of the scalp behind the fluctuating tumor, extending from the mastoid process to the occiput.

December 28th, operation. The whole middle ear was thoroughly exposed, and was found to be filled with purulent cholesteoma masses. The bones were, to a great extent, necrosed, black, especially in the direction of the posterior fossa of the skull towards the sigmoid sinus; the external wall of the sinus was destroyed; the sinus itself, filled with a dark-brown fluid; the former was exposed as far as its posterior upper angle (towards the brain), and as far as possible towards the heart by removal of the greatest portion of the mastoid process.

On account of the continued fever and fetid suppuration of the sinus from the direction of the bulb, the whole mastoid process was resected on December 30th, as far as the foramen stylomastoideum, and the sinus still more exposed in the direction towards the brain, until the healthy dura was reached. At the same time the inner necrosed, disintegrated sinus wall was removed to the extent of $1\frac{1}{2}$ to 2 cm., and the yellowish-tinted pia of the cerebellum exposed, which was adherent at the periphery of the necrosed portion of the dura to the healthy dura.

This was followed by a rapid decline of the fever and improvement in the general condition, disappearance of the rigidity of the neck muscles,

cessation of suppuration in the sinus, and formation of normal granulations of the pia and dura.

On the eighth day after the operation there was a return of fever (without chills), and some cough for two days (a slight metastasis of the lung), followed by a permanent afebrile condition. Some swelling of the lymphatic glands below the sterno-cleido mastoid occasioned a torticollis, which lasted for two or three weeks.

Seven weeks after the operation a perfect cure had taken place, leaving the retro-auricular opening covered with solid epidermis.

This case is interesting:

1.—In that the boy had suffered with an acute mastoiditis, and was operated on for the same three years before the dangerous affection made its appearance, and that the otorrhea is not cured in a few weeks after trepanning in an acute case, otherwise the formation of cholesteatoma will surely follow with its dangerous results to life.

The sudden appearance of the complication, which is positively fatal where a thorough operation is not at once undertaken, was, in all probability, caused in this case by the acute throat affection (perhaps diphtheria). Patients suffering with a chronic purulent otitis are in great danger from acute infectious diseases, and especially from influenza.

2.—The extension of the process: Total destruction of the whole transverse sinus, from the angle to the bulb, and circumscribed meningitis. A solid thrombus in the bulb (which was not found by Lindt and which he did not waste time to seek) separated the purulent matter from the jugular vein and the heart. Greater disintegration of the thrombus was fortunately prevented by the timely exposure of the sinus, and hence only a few chills and slight pyemic symptoms made their appearance.

Lindt did not attempt to ligate the jugular vein at the first operation, as the condition of the patient necessitated the termination of the operation, intending to rectify this at the first appearance of further pyemic symptoms. The necessity did not occur.

The occlusion by the thrombus in the bulb was firm and its disintegration was prevented by the operation. It was, at all events, somewhat risky to wait further developments.

A contra-indication to ligation was not present in this case, from the moment that the sinus was opened nearly within reach of the bulb.

The diagnosis of sinusphlebitis was easy to make, although the circumscribed meningitis could not be diagnosticated; a general incipient meningitis did not seem probable; it could not, however, be positively excluded any more than the presence of a still quiescent cerebellar abscess. The latter would have been recognized during convalescence, and could have been easily found by way of the operating wound. This case teaches the necessity of a rapid and radical exploration as soon as a positive suspicion of any sinus affection is present.

ON SYPHILIS IN CHILDREN.

ANTONELLI (*Annales des médecine et chirurgie infantile*, 3, 1898, 12. *Der Kinderarzt*, 1898, ix., 219). The author, an oculist, according to

his experience believes congenital syphilis to be much more frequent than is usually supposed, and thinks that the oculist and the dermatologist had especial opportunity to demonstrate this. In congenital syphilis there are nearly always, if not always, present changes in the fundus of the eye, which have already developed in uterine life, or in very earliest childhood, and which always leave behind traces which can be demonstrated by the ophthalmoscope.

The greater number of cases of congenital syphilis are, however, of a benign nature, and curable with proper treatment. The author found present most frequently of Hutchinson's three signs, those relating to the eye (keratitis, etc.). The changes in the fundus of the eye are, for him, the most important signs to demonstrate congenital syphilis, or to arrive at a diagnosis in doubtful cases.

THE SYMPTOMS OF CONGENITAL SYPHILIS IN EARLY CHILDHOOD.

KATZENSUFIN (*Munch. Med. Wochenschr.*, 1898, *xlvi.*, 1116). Children of syphilitic parents, in whom the well-known symptoms of typical syphilis are absent, present a long series of phenomena, which are absolutely necessary for a proper diagnosis, and therefore also for the adoption of successful therapeutic measures, especially as we meet with great difficulties in eliciting the previous history.

As regards the individual symptoms, in the first instance, we will find that anemia is the most frequently detected and most frequently occurring. The children occasionally look pale, and this pallor has a certain yellowish tint. In severe cases this yellowish tint is so marked that the arteries do not seem to contain any blood. A very constant accompaniment of syphilitic anemia is enlargement of the liver and spleen. These hypertrophies, together with the anemia, disappear under anti-syphilitic treatment.

Together with an enlarged liver, marked ascites could be demonstrated in a number of cases; there is, however, an even distension of the abdomen.

These anemic children may frequently be very well nourished, some of them even present a well-developed panniculus adiposus.

Children with para-syphilis frequently suffer with a chronic intestinal catarrh. These may be known by the absence of improvement when the well-known remedies for intestinal catarrh are administered, but in which an anti-syphilitic treatment will rapidly cure the catarrh. Syphilitic children also frequently suffer with a bronchial catarrh, where no specific disease can be demonstrated, the same as in the para-syphilitic intestinal catarrh.

On account of the active cachexia, due to latent syphilis, a greater susceptibility of the mucous membranes is caused, which may lead to their most intractable inflammation. These bronchial affections are usually also accompanied by other para-syphilitic symptoms, and can only be rapidly cured by combining a causal with the symptomatic treatment.

A chronic coryza, evidenced by more or less snuffling is only very rarely absent in para-syphilitic children. A certain number of para-syphilitic children are born prematurely, and are under weight. These will be stunted in their bodily as well as mental development. Others will, it is true, be born at term and in normal labor, but the developmental disturbances will occur later. These children are, as a rule, those which succumb to atrophy, where we are unable to recognize the true cause of the latter. Two other important developmental defects are frequently found in families where syphilis is present, namely, spina bifida and chronic hydrocephalus.

The prognosis is favorable where proper treatment is administered to para-syphilitic children, provided that treatment is continued for a very long time, as syphilitic symptoms will undoubtedly make their appearance sooner or later when treatment is interrupted.

Treatment consists, in the first instance, in administering to these children, when para-syphilis is diagnosed or suspected, very minute doses of calomel and potassium iodide; secondly, in the prophylactic treatment of children yet to be born, by putting father and mother on a course of anti-syphilitic treatment.

ADENOID VEGETATIONS OF THE NASO-PHARYNGEAL CAVITY, WITH ESPECIAL REGARD TO THE CAUSE OF THEIR FREQUENT RECURRENCE IN THE SAME INDIVIDUALS.

HEERMANN (*Therap. Monatsh.*, 1898, xii., 426). Heermann distinguishes two forms of adenoid vegetations; a primary, which is due to a tuberculous taint in the individual, preventing an obstruction to respiration, and which may also lead to involvement of the nose. Their removal leads to a cure, if it is done thoroughly.

Secondly, secondary adenoid vegetations which, according to Heermann, are produced as follows:

The patient acquires a coryza, which becomes chronic, a swelling of the turbinoid bones takes place, which continues for a long period, perhaps for years. The nose is not sufficiently roomy for the passage of air. Insufficient ventilation and congestion of the secretions may now lead to a hyperplasia of the pharyngeal glands. This introduces a new factor, which restricts nasal breathing, and this is finally altogether prevented. If the adenoid vegetations are removed in a case of this kind, the patient is not cured, and the vegetations will reform, as it is impossible to remove all adenoid tissue from the nasal cavity.

A necessary conclusion is thus presented, in general practice, that the nose should, in the first instance, be treated and the catarrhal swelling removed. For this the following treatment has been found practical: The nose should be painted with $\frac{1}{2}$ per cent. solution of cocain, and a mixture of sodium iodide, 3.0 to 12.0 of boric acid or of the latter alone, is insufflated. In especially severe cases, painting with a solution of cocain must be repeated several times during the day; in simple cases,

one application is sufficient. In about eight days the good effects are generally noted.

Occasionally the hyperplasia of the pharyngeal tonsil has so far disappeared that their extirpation may be spared patients afraid of the knife. As a rule, however, they should be removed.

After the operation the patient is confined to his bed for two days, and is nourished with cold milk, then he may be allowed to leave the house. The applications to the nose are to be continued. Simple powder insufflations will now be sufficient.

It is only rarely that we are compelled to cauterize the turbinated bones, for example, by means of trichlor-acetic acid. Treatment of the ear, where necessary, should not be undertaken until two weeks have elapsed after the operation.

Heermann uses Jurasz's tongue depressor and Gottstein's knife in operating. Heermann does not approve of etherizing the patient for the operation.

DIAGNOSIS OF HEART DISEASE.

SOLTMANN (*Jahrb. b. Kinderheilk*, 1898, *xlvi*, 1). The author points, in a terse and pregnant form, to the phenomena of auscultation of the childish heart, and its peculiarities, as compared with that of the adult. The well-known proportionately great growth in volume of the child heart up to the twelfth year of age, is essentially confined to the cardiac muscle, and in conjunction with the greater size of the aorta and pulmonary artery, favorably influences the course especially of valvular lesions. These physiological data have not, so far, been sufficiently noted in judging of the results of auscultation, and percussion has been looked upon as more important, although the former is more essential in the prognosis of a case.

The author discusses the systolic murmurs in the first instance. These are divided into:

1. *Accidental anemic murmurs*.—Being absent during the first three years of life (therefore a systolic murmur is always organic at this period of life), and rarely met with until the eighth year, their appearance is especially noticed in anemic children at the time of puberty. The following explanation was given by Soltmann for this fact: The murmurs do not originate at the mitral valve, but at the pulmonic valve, and, according to Geigel, for the reason that the slight pressure in the vessels present in anemic persons cannot resist the powerful systolic pressure of the ventricles, and that the blood therefore enters with great power and noisily into the comparatively narrow lumen of the artery. The weakness of the ventricles, with a large lumen of the vessels in early childhood, therefore is the cause of the absence of an anemic murmur; on the other hand, the strong pressure of the ventricles, together with a comparatively narrow lumen of the vessels at the time of puberty, is the cause of their frequent occurrence.

2. *Cardio-pulmonary (heart and lung) murmurs*.—These make their appearance at the second year of life, by carrying over the cardiac contrac-

tion to the compressed distended lung in inspiration and expiration. Infiltration, retrocession, in fact all factors favorable to the conduction of sounds, will enhance these murmurs. They are especially distinct over the lingula and the large vessels. The frequent change in the character of the sound, its increase during deep respiration, and its disappearance when respiration is suspended, are characteristic of the cardio-pulmonary murmur.

3. *Endocardial murmurs*.—The diagnosis of mitral insufficiency is much more difficult than in the adult. The second pulmonic sound is only rarely pathognomonically increased, on account of the greater lumen of the vessels; its extension to the right is much more rarely marked, due to the great reserve power of the ventricular muscles; its extension to the left is also only of partial value, because of the position of the boundary line of the apex beat, which is already physiologically placed to the outer side. The diagnosis will therefore have to be based, as a rule, only on the constant, pure systolic murmur, and on the pulsating character of the apex beat.

4. *Myocardial murmurs*.—The diagnosis is here supported by the circulatory disturbances and subjective sensations which soon make their appearance. These murmurs are not only heard at the apex, but often more distinct even at the base. The muscular degeneration favors relaxation, and therefore enlargement toward both the right and left sides. They follow infectious diseases, especially diphtheria.

ON CONGENITAL SPASTIC PARALYSIS OF THE EXTREMITIES AND ITS TREATMENT.

HOFFA (*Münch. Med. Wochenschr.*, 1898, *xlv.*, 454). Our first minute knowledge of this disease comes from England, where Little described the affection as a disease *sui generis* in the middle of the forties. Little's disease cannot be said to occur altogether infrequently; it occurs with equal frequency in boys and girls. It is not always recognized immediately after birth, and the friends of the patient, as a rule, only become suspicious when the child should begin to walk; for this reason, the greater number of cases do not reach the hands of the physician before this age.

The symptom complex is as follows: The lower extremities are always and similarly equally affected, and are always affected more than the upper extremities, which may even be not at all affected. In children the legs are, as a rule, rotated inward and strongly adducted, so that they will often be crossed; in the adult this is not so distinctly marked, the great inward rotation may even be altogether absent. The hip and knee joints are slightly flexed. As a rule, a bilateral pes equino-varus is present; it happens, however, also relatively frequently, that one side presents a pes equino-varus, while the other presents a pes equino-valgus. In very young children the feet, as a rule, present a normal shape when at rest, and the deformities mentioned usually first make their appearance

with the first attempt at walking, and are caused by the tension of the gastrocnemius. The trunk is carried stiffly and leaning forward. All motions seem clumsy. The step is short and hasty. The raised foot is dragged over the floor on its point, and when an attempt is made to set it on the ground it is thrown before or beyond the other foot. During walking the knees touch each other. In marked cases lateral movements of the trunk and swaying motions of the head are very plainly seen. In most cases the patient is forced to make use of some support in walking, or they may not be able at all to walk alone. When the upper extremities are effected both arms, as a rule, are firmly pressed to the trunk; the elbow joint is flexed; the hands pronated and flexed toward the palmar and ulnar side; the fingers are carried in extension or in over-extension.

The disease may also involve the flexors of the head and the muscles of the neck and face, in some cases strabismus is present. Occasionally the muscles of speech are also affected, the children will only learn to speak at a late age.

The course of the disease is very chronic, retrogressive or stationary. The strength of the muscles, their electric irritability and sensibility are all perfectly retained, only the muscle tonus is abnormally increased. The muscles affected are, as a rule, well developed, their power is not notably diminished. Contractures very readily occur from non-use. The tendon reflex is increased. Intelligence remains more or less undisturbed. Convulsions make their appearance especially in the early period, as a rule during the first month; generally during the first year recur temporarily, and then become more and more rare, either disappearing altogether, or they may also continue during life.

The cause of this disease is to be found, according to Little, nearly without exception in a premature difficult or asphyctic birth. All of Hoffa's cases also presented a history or a premature resp. difficult birth. A narrow pelvis of the mother, prolapse of the funis, first birth, etc., may act as a cause.

The lesion produced is a traumatic meningeal hemorrhage, caused by a tearing of the veins in the subarachnoidal tissue. Other etiological factors may also be intracerebral hemorrhage, brought on by rupture, thrombus formation or embolism.

The prognosis is unfavorable. Spontaneous improvement has been observed. The progress of the disease, as a rule, never occurs; at the worst, the affection remains stationary. These cases are always to be considered most favorably, although they are, indeed, only rarely met with in which the muscles which lead from the pelvis to the thigh and leg are only slightly affected. After contractures, marked muscular shortening and atrophy have taken place, good results can only be obtained with the greatest difficulty.

The treatment can only be symptomatic. We must attempt to strengthen muscular irritability by practice and education. We may improve the patient's condition, so that he will be able to transport himself without outside help. To restore the disturbed equilibrium between the flexor and abductor muscles and their antagonizers, we must endeavor to

strengthen the extensor and abductor muscles and to weaken, on the other hand, the flexor and adductor muscles. The first may be attained by massage and gymnastic exercise. The muscles are to be strongly kneaded twice daily. Following this, gymnastic exercise should be practiced for some time. The muscles referred to can be weakened by an energetic tapotement of the ends of the tendons or, where this is not sufficient, by tenotomy resp. tendectomy.

The adductors, the muscles situated in the bend of the knee, and the tendons of Achilles are here to be considered, and it is to be recommended that all these operations be carried out in one sitting, after which the joints are to be put up in plaster of Paris in an over-corrected position. After this bandage has been carried from four to six weeks, the patient should receive massage twice daily, and should lie after each treatment on an apparatus, by means of which the legs may be abducted at will; the knee joints can be stretched, and the legs can be rotated outward as far as possible for two hours.

After the patient has passed the proper time on the apparatus, he is to practice walking, at first by the help of Heusner's walking apparatus, later with the use of two canes, and finally alone. After walking has been practiced, gymnastic exercises are again in order, whose purpose, above all, is to again subordinate the muscles to the will of the patient.

During the past ten years Hoffa has successfully treated sixteen cases of Little's disease by this method.

HYPERTROPHIC SCLEROSIS OF THE LIVER, ACCOMPANIED BY CHRONIC ICTERUS, IN THREE CHILDREN OF THE SAME PARENTAGE.

Dr. HASENCLEVER (*Berlin klin. Wochenschr.*, 1898, xxxv., 997). Dr. Hasenclever had under his care two sisters and one brother, from 1895 to 1896, of the ages of 22, 24 and 18 years, respectively, all three of whom presented the symptoms of the foregoing disease. The grandparents had lived to an old age; the parents are not related; the mother is aged 47 years, healthy; the father 48 years, merchant, who does not give a history either of syphilis or alcoholism; he was picked up senseless in a ditch sixteen years ago. According to the statement of his relatives, it may be assumed that he was stricken with apoplexy while on his way home, and then fell into the ditch. Out of ten children (one abortion) six are living: 1, abortion; 2, the patient C., 24 years old; 3, the patient M., 22 years of age; 4, a healthy, robust boy, 20 years old; 5, the patient of 18 years old. The attack of apoplexy in the father occurred November, 1880; 6, a healthy, robust girl, 16 years old; 7, died at the age of 9 months; 8, died at the age of $2\frac{1}{2}$ years; 9, died at the age of 9 months; 10, a healthy, robust girl, 4 years of age.

The disease made its appearance first in M. (3) who, as a young child, was always pale, with a yellowish coloring of the face; had a light attack of measles. During primary and secondary vaccination there was great local reaction. At 13 years of age trouble in both eyes, swelling of the

upper lids, a sensation "as though a membrane covered the eyes," great photophobia. Duration about four weeks, recurred every year. At 14 years of age had prolapse of the rectum; disappeared later. From the time that she was 15 years of age the perennial reappearance of the eye affection ceased; in place of this, inflammation at the nasal entrance to the right, externally, accompanied by swelling and redness of the nose, recurred also for several years. The menses began at 19 years of age, irregular. At 18 years of age the patient's eyes became yellow, Spring, 1893. Previous to this she complained greatly of her stomach and of headaches. Toward the end of 1893, the urine was said to have been very dark and the feces discolored (like clay). Summer, 1894, fell off a swing, remained unconscious for two hours. Afterward again well, was able to walk without pain. Early in 1895, complained of pain in the right ankle joint after dancing, which extended upward to the hip. These then appeared alternately in both legs. Her legs became stiff, after sitting for some time. The urine was repeatedly dark-colored, the stools colorless, so that during the time between the end of 1893 and that of 1895 an obstruction to the flow of gall into the intestine, which occurred periodically, could be assumed. The icterus remained stationary, and only varied in intensity. Since December, 1895, Hasenclever had the patient under observation. Icterus was intense, the urine of a dark-brown color, containing a trace of albumin; the feces were the color of clay. The stool, microscopically examined, contained much fat, no eggs of intestinal parasites. The submaxillary glands of the right side were swollen; the cervical, axillary and inguinal glands imperceptibly enlarged. Dullness of the liver on percussion 14 cm.; when lying down, a firm, smooth liver could be distinctly palpated. The spleen was very much enlarged and firm. There was no ascites present, no ectasia of the veins of the abdomen. The blood was pale, the white blood corpuscles were not increased, the red seemingly diminished; emaciation only slight. The mammae were correspondingly developed; there was no deformity of the head or the skeleton; the bones was not anywhere tender on pressure; no cicatrices of the skin were found, neither were any present in the mouth; the teeth were perfect; nose bleeding occurred frequently; the gums readily bled; appetite was always remarkably good; pain was complained of in both hip joints, so that locomotion was very much hindered; the patient had never experienced any pain in the abdomen, nor had she had chills; no fever, nor vomiting; occasionally some edema appeared on the upper surface of the feet and the malleoli; no itching to speak of; no hemeralopia. In the beginning of 1896, the icterus had diminished somewhat; the urine was bright, clear, contained no albumin; the feces had a normal color. These symptoms of obstruction to the flow of bile, and again the freedom of the gall ducts, occurred repeatedly, likewise the edema. There still exists at present intense icterus; the size of the liver and spleen has not diminished; ascites and other symptoms of congestion have not made their appearance; emaciation has not increased (condition in March, 1897).

The second patient was C. (second child). Had a slight attack of measles, also scarlet fever; vaccination ran its course without any complications. When a young girl she suffered much with her stomach

and with intense headaches, frequently accompanied by vomiting. The present disease began in December, 1894, with melancholia, and much weeping. Toward the end of December the patient was much improved. In the beginning of January, 1895, icterus, urine, stool. During the year 1895 the icterus was variable; in Autumn very pronounced; the urine was of a dark-brown color; the stool white. All symptoms then again improved; has been in Dr. Hasenclever's care since the latter part of December, 1895; marked icterus; the urine contained a trace of albumin. The other symptoms (urine, stool, blood) found as in M. Liver dullness (in the recumbent position) extended in the mammillary line from the lower border of the fifth rib to within two finger-breadths below the lower border of the ribs; the liver was firm, smooth; the spleen was greatly enlarged and firm; no ascites present; no distension of the abdominal veins; the glands were not enlarged; thyroid gland normal; the bones not tender to pressure; the gums bled easily; teeth sound; no fever or edema was present; the body was not developed according to age; the disease continued by exacerbations; emaciation slight; appetite always good.

The third patient is J. (fifth child). Vaccination ran a normal course. At 2½ years of age some injury to the head (was ridden over), afterwards perfectly healthy. The present disease began February, 1896, the first symptom being icterus; the urine was dark-colored; the stool colorless; there was some stiffness of the hip joints; Summer of 1896 improvement; was examined by Hasenclever in July, 1896; intense icterus; liver and spleen very much enlarged; neither ascites, nor fever, or edema were present; a few abdominal veins could be discerned on the abdomen; the urine did not contain any albumin; emaciation not present; remarkably small in size; course of the disease in exacerbations.

Examination of the other members of the family resulted as follows:

The liver and spleen of the father were not found enlarged, either by percussion or palpation; the inguinal glands were somewhat enlarged; there were no cicatrices present; the heart was healthy; urine normal. The youngest child presented somewhat enlarged submaxillary glands; the neck and inguinal glands were also enlarged. None of the other members of the family presented an enlargement, either of the liver or the spleen. The family lived in a damp dwelling in 1888 (new house); during the years of 1890-95 in a very damp dwelling (basement, new house); afterwards in dry habitations. All the children of the family took the breast; food after this was nothing extra. The children lived at home with their parents until now; never obtained any alcoholic beverages. M. and J. were very much addicted to sweets as children; besides this, M. ate many coffee-beans, and frequently drank vinegar. Rhachitis was not present in any of the children; they all learned to walk at a very early age; the children, 4, 6 and 10, were healthy and well developed. On the other hand, we were struck with the smallness of the figure in M., C. and J., and the retardation of bodily development as compared with the other brothers and sisters. The difference in weight also is particularly interesting. All the children worked in a cloth factory; none of them presented any intra-abdominal

venus hum; the hemorrhages made their appearance after the icterus; the liver was plainly displaced in respiration.

The clinical findings and the course of the disease undoubtedly justifies the diagnosis: Hanot's hypertrophic cirrhosis of the liver. The disease existed four years in M.; the enlarged liver had not diminished; there was present a permanent intense icterus; the splenic enlargement made its appearance early; there were no symptoms of portal obstruction; the disease continued in exacerbations.

The course of the disease up to the present time did not indicate an occlusion of the bile ducts by stone or tumor (lymphatic glands). In enlargement of the portal lymphatics, ascites and other symptoms of a portal—not as bile—obstruction, are present in the majority of cases, according to statistics. Cases have been described where a carcinoma of the head of the pancreas pressed upon the bile ducts (1); furthermore, an abnormal course of the choledochus through the head of the pancreas (2), occlusion of the choledochus by displacement. All these abnormalities may be left out of consideration in Hasenclever's cases. No signs of any disease of the heart or lungs were present.

Hypertrophic cirrhosis, accompanied by chronic icterus and enlargement of the spleen, occurring at an early age, has been described a number of times—among others Fox, White, Fordeus, Bettelheim, Gilbert and Fournier. On the other hand, this disease has never been described in literature as occurring in three children of the same family. In the cases described above, alcohol as an etiological factor may be excluded. The history points to two other modes of contraction: hereditary syphilis and a damp habitation. The first may be adduced from the apoplectic stroke of the father at the age of 32 years, the eye disease of the patient M., when a young girl, and the arrest of growth in M., C. and J. The latter has frequently been pointed out in literature as a symptom of hereditary lues: Rivington, a 16-year-old girl, resembled a 6-year-old; Trissier, a 19-year-old boy gave like impression of a 10 to 11-year-old; Schwimmer, a 23-year-old girl, looked like a 14-year-old. Fournier also lays stress on the retardation resp. incompleteness of the physical development. Nutrition was sufficient during the attacks, but when they had run their course it was markedly increased.

Whether the residence for years in damp dwellings can be looked upon as a direct or indirect etiological factor for the occurrence of cirrhosis of the liver, or of disease of the liver in any case, Hasenclever is unable to say. The complaint of all three patients of pain and stiffness of the hip and knee joints may be referred to as rheumatic, joint, or muscle affections. It is, at all events, strange that these were not found in the other children. Malaria does not enter into the history.

A remarkable symptom is pointed out by Hasenclever, which occurred in all of his cases. All three present a certain form of chronic interstitial hepatitis, accompanied by chronic icterus and enlargement of the spleen, without ascites and other signs of portal obstruction, which may, with great certainty, be ascribed to hereditary syphilis. At the same time, arrest of growth is also presented by these patients. Gilbert and Fournier also point out that this arrest of growth is a peculiar symptom in hyper-

trophic cirrhosis, accompanied by chronic icterus and enlargement of the spleen. Over against these few cases, however, we have a great number of cases of hypertrophic cirrhosis on a hereditary syphilitic basis in early age, which corresponds with the type of hypertrophic cirrhosis of the liver, but in whom, nevertheless, no arrest of growth was observed. As the rest of the children, furthermore, neither presented any disease of the liver or arrest of growth, the question is justified, whether the causal nexus between hereditary syphilis, disease of the liver, and arrest of growth, should not be looked upon in such a manner. That the disease of the liver was a direct result of lues, the arrest of growth in uterine life, however, was only the result of the liver disease, which in later life presented itself as a true hypertrophic cirrhosis. The combination of both affections in three brothers and sisters at the same time is too suggestive that it can be designated chance.

ETIOLOGY OF CONGENITAL DISLOCATION OF THE THIGH.

SCHANG (*Zeitsche f. orthop. ckirurgie*, 1898, V.)—Now that the treatment and incidentally the pathological anatomy of congenital subluxation of the thigh has received a mighty advance through Hoffa, the time has arrived to study its etiology also. This has given rise to innumerable theories since the time of Hippocrates. The following are the main groups:

1. *Its occurrence by traumatism* during pregnancy or birth. A laceration of the capsule would have to occur here necessarily to permit the luxated head to pass, which was, however, not found to be present in any case.

2. *The supposition of a primary affection of the joint* analagous to the consecutive luxation in coxitis is disproved by the negative anatomical findings. We never meet here with the traces of a previous inflammation. The changes in the form of the constituency of the joint are of a secondary nature not inflammatory, and are therefore more marked the older the case.

3. *Affections of the central nervous system*, as porencephaly, causing paralysis and retraction of the muscles, may lead to congenital luxation: this affection, however, which is a rare one, at all events, does not present the well defined characteristic picture of true congenital luxation of the hip.

4. *An arrest of development*, in the sense that the head was prevented from entering the socket, must be excluded, as we are taught by Petersen that the joints are not formed by the approach of two separated

parts but by a division of a single part. The head, even though the socket were absent, would therefore have to remain in its original position until it was pushed away from it by some force.

What might this force be?

It cannot be the bodily weight which comes into play in walking and standing, for, in the first place, we find luxations already present in the fetus, and, secondly, if this were the explanation, the luxation would be *anteriorly* and upwards.

The most natural explanation is furnished by the mechanical theory: During intrauterine life the thighs are in a position of flexion, adduction, and inward rotation. Where there is sufficient amniotic fluid, the uterine wall forces this position by continued pressure, and pushes the head, while enlarging the capsule toward its posterior site and downward out at this place.

The capsule, of course, opposes a certain resistance to the onward pressing head, and thus is explained—at the same time giving support to this theory—the typical deviation of the neck of the thigh-bone in a forward and downward direction.

That the ligiteres is found either elongated, or torn, or hypertrophied, may also be explained by the action described.

Another support of the mechanical theory is found in the fact that, as a rule, nearly without exception, dislocated hip joints are found in individuals who are subject to multiple intrauterine heredity deformities, which are produced, as we know, as a rule, by uterine pressure where there is sufficient amniotic fluid.

We especially meet frequently with two shallow grooves converging from the shoulders to the sternum, which correspond to the position of the firm contract of the arms.

For what reason, congenital sublaxations of the thigh greatly preponderate in girls, is not explained, it is true, even by the mechanical theory.

ON LARYNGITIS EDEMATOSA IN CHILDREN.

Dr. LOUIS BAR (*Aerythiche Rundschan*, 1898, viii., 700) says children are subject to a number of affections that have a violent beginning and run a rapid course, which have a great similarity to the disease picture of a laryngitis.

Unless the laryngoscope is employed, whose use is generally combined with great difficulties, the diagnosis is not fully made. Croup and pseudo-croup are the diseases which most frequently lead to mistakes. The absence of pseudo-membranes in the pharynx and in the expectorated masses, the absence of glandular swellings and of a sero-sanguinolent discharge from the nose, excludes diphtheria in our minds. When we

bear in mind, however, that the very young child does not expectorate, and recollect that in certain cases, as described by Mackenzie, the mucous membrane of the larynx is covered by an exceedingly thin membrane which is only visible by a laryngoscopic examination or in the cadaver, we can understand the difficulties that beset us without a laryngoscopic examination.

Some laryngeal complications of measles produce a whitish exudate accompanied by the symptoms of stenosis. A mistake with pseudo-croup is not very likely, for this form of laryngitis, as a rule, makes its appearance suddenly in the night and disappears in the course of a few hours; besides the mucous membrane of the pharynx is in these cases of a normal appearance; there is no pain present in the vicinity of the larynx, and finally the respiration and voice will again become normal in the interval between the attacks of barking-cough and whistling inspiration.

Polypi of the larynx are also met with in quite young children, may even be congenital and cause respiratory disturbances from birth. In these cases the respiratory disturbance is, as a rule, continuous. In rainy weather or a moist atmosphere these naturally hygroscopic polypi greatly enlarge, and will then cause symptoms very similar to those produced by laryngitis edematosa.

Where we are dealing with foreign bodies in the larynx, the laryngoscope and previous history are the best means to arrive at a diagnosis of these violent suffocative attacks which, threaten asphyxia; another symptom is the hoarse voice, which at intervals becomes perfectly clear. All these symptoms resemble those found in laryngitis edematosa, and may also occur in edema.

We will also mention here the symptoms that are frequently found in children, resembling those found in compression of the larynx, and due to disease of the lymphatic gland. The difficulty of respiration, which is caused by the pressure of these glands is in fact similar to that caused by edema of the glottis. They differ in that they only occasionally last very long and also by the antecedent symptoms.

When finally a child, suffering from albuminuria or an affection causing dropsy, or from a chronic affection of the larynx, shows signs of dyspnea without any change in the voice or disturbance of expiration the diagnosis of "edema" will frequently come up for consideration. The final diagnosis of edema of the glottis should, however, only be based on a laryngoscopic examination, no matter what other circumstances may be present.

As a rule, the course of laryngitis edematosa is shorter in children than in adults, in the latter usually lasting eight days, while its duration in children is only two to three days. It runs its course according to the cause of the intra-alveolar deposit. When this is primary, its duration is as above stated and generally ends in recovery. If chronic, its course is slow and frequently fatal.

The disease lasts three to six weeks, alternately improving, seemingly healing, then again presenting paroxysms, which lead us to fear the worst. Death may result in two ways—either by sudden asphyxia or gradually

from the progressive dyspnea and cyanosis resulting from the disturbance of blood formation.

Treatment.—Laryngitis edematosa is always more or less an inflammatory affection, whether primary or secondary, with the exception of those cases where it is confined only to serous swelling. Its treatment will always, regarding the primary cause and the nature of the edema, have to be local as well as general. The inflammation, caused purely by cold, which we so often see in children, as well as the transmitted inflammatory edema, should be treated by anti-phlogistic measures. Priessnitz's applications to the neck, the swallowing of ice pellets, sprays of tannic acid solution, mustard foot-baths, and sometimes emetics, will give us the best and most rapid results.

The application of cold, according to the German method, will give us the best results in the beginning of the disease; where inflammation has already occurred, steam and hot applications to the neck are indicated. It should not be forgotten, however, that children of excitable temperament easily become frightened at this form of inhalation. Ether or bromide of sodium with syrup of chloral will give great relief in the subjective feelings of anxiety occurring in respiratory difficulties. The atonization of astringent liquids, as recommended by Trousseau, especially of tannin (8 gr. to 500 of water), will give favorable results in children as well as in adults. The atonization of alum solutions cannot be recommended; they frequently cause ulcerations, and thus complicate the course of the disease. If the edema is of a more serous nature, we obtain the best results from insufflation, in inflammatory edema these are not so good. In these the pilocarpin injections, recommended by Gottstein, will act more favorably. Scarification, recommended by Gordon Buck, of New York, based on numerous observations, were practiced by Lisfranc in France, but never succeeded in our hands, and the anatomical consideration justifies the disuse into which the operation has since fallen. Not so tracheotomy, which has to be done quickly in the child at times. It should be resorted to, as soon as progressive cyanosis is observed. It cannot be supplanted by intubation, as the edematous swelling may easily close up the lumen of the canula, which can only very rarely occur with the trachea canula on account of the rarity of sub-glottic edema. The general treatment at the same time must not be overlooked, especially in secondary edema. The administration of laxatives and diuretics will facilitate the absorption of the edema, as will also an anti-tubercular or anti-syphilitic treatment dissipate such an edema that is caused by similar local processes. The local treatment, however, no matter what the nature of the edema may be, is the primary consideration, as it will at once remove the most important factor, the respiratory difficulty, otherwise the patient might succumb to the dyspnea even before the primary disease, which is frequently curable, has reached its highest point. For this reason tracheotomy is of such immense importance, not when the dyspnea threatens to run into asphyxia, but earlier, when the patient still has some strength remaining and has not used up its greater part in trying to overcome the laryngeal stenosis.

O'DWYER MEMORIAL FUND.

At a meeting of the General Committee on the O'Dwyer Memorial Fund, held at the Academy of Medicine, March 13, 1899, the report of the sub-Committee on Scope and Plan was read and discussed. Several amendments were offered and acted upon, and the Secretary was instructed to mail a copy of the amended report, as adopted, to each member of the full Committee, with a view to final action at the next meeting.*

REPORT.

To the General Committee of the O'Dwyer Memorial:

It is proposed to raise a fund of not less than \$30,000, or one which shall yield an income of \$1,200 or \$1,500 a year, this fund to be held in trust by the Trustees of the New York Academy of Medicine.

The income from the fund, or such portion of it as shall be deemed advisable and necessary, shall be used to aid Dr. O'Dwyer's sons during their education. The balance of the income and finally the entire income shall go to the support of two fellowships, which shall be known as the "O'Dwyer Fellowships in Diseases of Children." It is hoped that a sufficient sum could be secured to make these fellowships pay from \$600 to \$750 a year.

1. The fellowships shall be awarded by a committee of five, one of whom shall be appointed by the President of Harvard University, one by the Dean of the Johns Hopkins Medical School, one by the Provost of the University of Pennsylvania, one by the President of the University of Chicago, one by the President of the New York Academy of Medicine. The members of the committee, after the first term, the length of which shall be decided by lot, shall hold office for five years, one person being appointed every year.

2. The fellowships shall be open to any physician graduating in the United States, who has had a four years' course in a regular medical college and served not less than eighteen months in a hospital.

3. The award shall be made after a competitive examination, which shall be both written and oral.

4. The fellowship shall be held for two years, subject to the following conditions:

a. That the holder shall devote his entire time to the study of pediatrics, under the general advice or directions of the Committee.

b. That he shall furnish at the end of the first year some piece of original work which shall be deemed meritorious by the Committee; failing to do which he shall forfeit the fellowship for the second year.

c. That he shall furnish at the end of the second year some piece of original work which shall be deemed meritorious by the Committee; failing to do which shall work a forfeiture of one-third of the fellowship fund for that year, which shall be withheld until this time.

d. No person shall hold a fellowship for more than two years.

It is expected that the fellowships would accomplish two things:

First.—That there would be drawn into the study of pediatrics men of the highest ability, but perhaps of limited financial resources, who would be fitted by their previous general training to make the best use of the opportunities thus afforded, and who would be able after two years to take a high rank as teachers and practitioners of pediatrics throughout the country. Two such would be always in training as a result of the fund.

Second.—That it would do very much to stimulate original work in this department of medicine.

The above is suggested only as a general outline. Many details would, of course, need elaboration, and many minor changes might be required in the plan, after further consideration.

PEDIATRICS

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ORIGINAL ARTICLES

THE PATHOGENESIS OF GASTRO-ENTERIC DISEASE IN INFANTS.*

By JOHN ZAHORSKY, A.B., M.D.,

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Physician to the Bethesda Foundling Home, etc.

THE macroscopic lesions of gastro-enteric disease in infants are inconstant and altogether unsatisfactory. A zealous investigator is very much disappointed to find post-mortem after a terrible disease such insignificant intestinal abnormalities. A slight congestion, a dusky or pale mucous membrane, swollen follicles, and occasionally a few ulcers, cover the whole gross appearances. A close scrutiny of other portions of the body, at least in the severer forms of enteric disease, will not fail to discover distinct pathologic variations in various internal organs. The liver may be found pale and slightly yellowish in appearance; the spleen very soft in consistence. The kidneys show hemorrhagic spots, areas of congestion, and a peculiar palor of the Malpighian pyramids.

The consideration of the morbid histology gives a far more comprehensive and satisfactory view of the pathology. The essential lesion in the milder cases being a hyperemia and cellular infiltration of the gastro-enteric mucous membrane, while in the severer forms of the disease, in addition, necrobiotic changes in the cell substance are constant. The columnar epi-

* Read before the Missouri Medical College Alumni Association.

thelial cells may be shrunken, empty, partially or entirely disintegrated.

With the proper stains, degeneration is easily made out. In cholera infantum an exfoliation of the epithelial lining is a prominent characteristic, but in all forms a detachment of the cells from the basement membrane to a greater or less extent occurs; consequently, a denuding of the capillary and neural plexus follows.

Degeneration of the secretory glands of the stomach and intestine is a concomitant lesion. The submucous layer and intracellular spaces are infiltrated with leucocytes and connective tissue cells.

The liver frequently shows marked fatty degeneration, or cloudy swelling of the hepatic cells, occasionally hemorrhages and necrotic foci.

The kidneys may show evidence of a toxic nephritis. Recently E. Mueller (*Deut. Med. Woch.*, March 3, 1898) has reported the discovery of extensive changes in the cells of the brain and spinal cord. These changes were degenerate in character, both nucleus and cell-substance being implicated.

Histologic appearances vary so much that it is impossible to formulate any definite classification. Nevertheless, all pathologic findings can, without exception, be placed among the morbid entities induced by an intoxication. The whole subject of gastro-enteric disease—excepting a very few in which mechanical causes are excitants—is the study of a local and systemic toxicosis.

THE CHEMICAL NATURE OF TOXINES.

The hypothesis that some simple varieties of diarrhea are due to the presence of acids in the intestinal canal has received sufficient clinical and experimental evidence for its substantiation. Yet frequently other irritating substances simulate the activity of acids. The ichthyotoxicum of Mosso has such an action. It is a toxalbumose. This, when applied to a mucous membrane, causes intense irritation.

Concerning the chemistry of these acids, considerable doubt still exists, but they do not seem to be the same in all cases.

Among the list noted are the fatty acids, palmitic, stearic

and oleic acids, lactic acid, acetic acid and butyric acid. To picric acid also has been attributed diarrhea.

It is an almost invariable rule that the acids are formed in the ileum or colon, since any excess of acidity arising in the stomach or duodenum is promptly neutralized by the pancreatic juice. In fact, according to Paulow, the stimulation of the duodenum by an acid increases the alkalinity of the pancreatic secretion.

The poisonous animal alkaloids probably play an important rôle in the pathogenesis of gastro-enteric disease. They are readily diffusible, consequently rapidly enter the circulation, and, unlike the albumins, the intestinal secretions have no antitoxic action against them. Several poisonous ptomains have been isolated from foods; e. g., myelotoxin from poisonous muscles, tyrotoxin from poisonous cheese, and a ptomain produced by the bacillus botulinus. Tyrotoxin has been found in milk and ice-cream.

These poisons cause the most violent local and general symptoms. Neurin may also be mentioned among the alkaloids which may occasionally reach the intestinal canal.

Many other bases from decomposing proteids have been investigated, and many are toxic. These may be ingested and produce toxemia.

Of still greater importance in this connection are the toxic proteids. It is well known that in the process of normal digestion toxic proteids are found. Reference is made particularly to the albumoses and peptones.

Matthes found that the hypodermic injection of one grain of deutero-albumose caused a great elevation of temperature in a guinea pig, while in man .07 gram produces marked febrile movement. Albumoses and peptones are transformed by the living cellular lining of the intestine. It is obvious that an extensive destruction of the columnar cells would necessitate a condition in which albumoses as such would reach the circulation. Clinically, too, it has been found pernicious to administer peptonized milk to infants suffering from severe enteritis or cholera infantum. Peptonized milk is indicated only in functional derangement of the secretions, the epithelial cells being intact.

In all acute infectious diseases toxins, probably of a proteid character, play the most important part in the patho-

genesis. However, toxic proteids, when introduced into the healthy alimentary canal, give rise to no symptoms. Thus the vegetable poisonous albumins, ricin and abrin, though very poisonous subcutaneously, are entirely inert when given by the mouth. Similarly is the venom of rattlesnakes. The powerful toxins of diphtheria, tetanus, and other diseases are totally harmless by the gastric route.

There has been considerable speculation as to the cause of this. It was assumed that the mucous membrane utilized its selective power, and these toxins were rejected. But later experiments showed that they were not found in the feces, which conclusively proved the existence of some antitoxic agency. Nencki and others have shown that the pancreatic juice destroys the toxins. Even a very minute quantity of this juice will destroy the thousand-fold poisonous dose of diphtheria toxin. The bile also possesses marked antitoxic properties against certain poisons. Much less powerful is the gastric juice.

According to the latest experiments, the liver possesses very little toxilytic function. But while the intestinal juices possess this property in an effective degree toward toxalbumins, alkaloids do not seem to be disintegrated. According to the experiments of Paulow, different foods in the duodenum stimulate the pancreas reflexly, so that different juices are secreted according to the chemical nature of the stimulus. Foods rich in proteids cause an increase flow of trypsin, while amylaceous diet stimulates a greater secretion of amyllopsin. Fat causes an increase in the enzyme which splits up the fatty molecule, and, as mentioned, acids cause an enormous increase in alkaline salts. It follows that in infants, in whom naturally the pancreas is in a state of insufficient development, the response of this organ to intestinal stimulus is feeble, and consequently there is present a greater predisposition to be overwhelmed by toxins. We can readily understand, too, how the high temperature of summer, by diminishing the flow of the pancreatic juice, becomes a factor in the susceptibility to infection. If from any cause the duodenal cellular lining and the nervous filaments beneath them become degenerated, it follows that foods cannot excite the pancreas to the proper activity. Fortunately the duodenum is not so frequently involved in enteric disease.

No doubt there are poisonous substances causing diarrhea that do not belong to the toxalbumins or alkaloids in food, but their composition is unknown. Most of the vegetable purgatives are resinous bodies; possibly similar substances are a result of bacterial activity.

THE PHYSIOLOGICAL ACTION OF THESE TOXINS.

The action of the ordinary acids is that of an intense irritant to the colon and ileum. Peristalsis is very much increased, becoming so violent at times that great colic results. Tenesmus is almost a constant symptom. The destruction of the colon cells may occur and constitute a simple dysentery. The action depends on their concentration.

Gases need only be mentioned. As yet we know none that are toxic which are formed in the intestinal canal, but by distention they stimulate peristalsis as to cause pain.

The action of the ptomains varies according to their composition. Vomiting and purging are the result of a few, but another larger list do not cause this symptom. The local irritation and tissue destruction is accompanied by great prostration. Pains in the head, cramps in the limbs, a sense of oppression of the chest, dryness of the mouth, constriction of the fauces, and paralysis of the secretory glands are the most common symptoms.

It has been pointed out that, contrary to the toxalbumins, they depress the temperature. Clinically there are many types of gastro-enteric disease, accompanied by a subnormal temperature. Frequently a toxemia, due both a toxic proteid and a ptomain, keeps the temperature normal, and yet a rapid dissolution ensues. Convulsions, stupor, and coma are the final symptoms.

The activity of the toxalbumins are well known. The predominant action is that of an infectious fever, and are etiologically related to the febrile movements in all prolonged gastro-enteritis.

Practical it is to note that some cause degeneration of the neuron, which subsequently cause marasmus. I need only refer to the experiments of Denitz, who showed that marked wasting follows the minute dose of tetano-toxin in certain animals. In another place I have reported cases in which the pyrogenic toxin of thermic fever causes subsequent infantile

atrophy. This has been produced with other bacterial poisons also, so that we are compelled to admit that marasmus does not always indicate a catarrh of the intestine as Fenwick would have us believe.

THE ORIGIN OF THE TOXINS.

The production of animal toxins is found in the chemism of cellular activity. Whether vegetable, bacterial, or animal cells, the function of forming toxic substances may be found among their actions.

In these days of intense nervous activity the human organism so frequently generates at some portion substances which are toxic to other portions. Most often this occurs in women, and in mothers may be executed in the breast milk, and thus induce a galactotoxismus in the infant.

Drs. Saunders and Fisch, in an unpublished paper, have reported several cases in which violent symptoms were produced by a toxic substance in mothers' milk. The poisons secreted in faulty breast milk are various in constitution and physiological action.

Intestinal irritants are common, exciting excessive peristalsis, with the resulting pain and indigestion. Recently an infant came under my observation suffering from gastric irritability, obstinate constipation and general atrophy. It was demonstrated that the infant retained sufficient nourishment: A toxic substance was found in the mother's milk, a few doses of which injected in a young white rat caused a marked loss in weight.

It is probable, too, that frequent excretions of toxalbumins occur in mothers' milk; in fact such a case has been reported, but they are harmful only when the pancreatic secretion is defective.

Another source of poisons is found in functional derangement of the alimentary glands and absorptive cells. One can readily understand how a pancreatic juice, with an active fat-splitting enzyme, may decompose more fat than can be readily transformed by the epithelial cells, and as a result an over-accumulation of fatty acids, which irritate the mucous membrane. The diarrhea induced by the ingestion of oils or fats in large doses is probably the result of this.

It is simple enough to formulate various interesting hypo-

thetical poisons due to functional derangements of the digestive apparatus, all due to faulty reaction of the organs to duodenal stimulation. Thus the rôle played by nervous influence and the complexity of a variety of factors—as disease of distant organs—finds a ready explanation.

The formation of toxic substances in the infantile organism and the excretion in the gastro-intestinal tract is another cause of enteric disease. Reference is made to Forchheimer's interesting article. Physiologically, it must be considered that the intestine and stomach have the function of excreting certain substances, which may terminate in disease of its own lining. Analogous is the production of miliaria on the skin.

Faulty metabolism in a cow may give rise to toxic milk. Cases have been repeatedly reported, in which violent symptoms were due to milk taken from a sick or menstruating cow.

The greatest source of toxins, however, is found in bacterial activity. These may be generated in the milk outside or inside the body. The ectogenic poisons are not frequent; in fact, numerous tests have been made of the toxicity of milk with negative results, yet tyrotoxin, and perhaps other ptomains, do occasionally occur and produce cholera infantum. Escherich would restrict this name to those enteric diseases due to ectogenic poisons.

Although this class of poisoning seems rare, still it is to be remembered that substances may be generated in milk, which possess no general toxin and yet have the property to inhibit the activity of intestinal cells, and thus constitute a predisposing factor to true infection.

The symptoms in ectogenic intoxication ensue very shortly after the ingestion of the milk or other food, while in endogenic poisoning a period of incubation is necessary, varying from twelve hours to several days.

The majority of the severer forms of enteric disease arise from endogenic intoxication. The examination of decomposed infants' feces for toxic substances have usually given a negative result. Czerny has even denied the pathogenesis of intestinal putrefaction; but yet because poisons are not found in the feces, it is a mistake to infer they do not occur, for the tests made on animals do not conclusively prove that the substances are inert toward the infant. Then, too, peptones are not found in feces, and yet these substances occur in the in-

testine, and just as the peptones are absorbed and changed, so toxic substances may be disintegrated and absorbed.

The putrefaction of intestinal contents is caused by the ordinary flora of the intestinal canal, namely, the bacterium coli, bacillus butyricus, proteus vulgaris, bacillus fluorescens, etc. Why these saprophytes assume a virulence, is as yet difficult to say. At any rate, the primary condition of the secretion, motion, and general activity of the digestive apparatus, whether directly due to insufficient or vicarious innervation, or the resultant of a mild toxemia, lies at the foundation of many abnormal fermentations. A hypokinesis of the stomach would certainly lead to fermentation. The rapid union of the hydrochloric acid with the albumins should lead us to lay little dependence on its antiseptic value. The safety of milk lies in its rapid digestion and absorption. Anything that hinders this endangers the organism. No doubt, as has been pointed out, the presence of sugars retards the activity of proteolytic micro-organisms. A small percentage of sugar with excessive proteids might possibly be easily decomposed.

When putrefaction has taken place, the irritating material is expelled before serious consequences result; yet in infants degeneration of the columnar cells follows so frequently that time is required for their restoration, and until these cells are again active, a tendency to accumulation of food is present, and consequently a disposition to more putrefaction.

Another danger of epithelial degeneration lies in the fact that pathogenic bacteria are permitted entrance to the lymphatic spaces in the sub-mucous layer, and by proliferation cause a true infectious disease. The poison is then formed within the tissues, and intestinal juices cannot reach them.

Many, if not all, of the gastro-enteric diseases, accompanied by fever for several days, are probably due to a true infection, and consequently run a definite course.

At present there can be little doubt that a virulent form of the bacillus coli commune caused the majority of the enterocolitis. Although a constant member of the normal intestinal flora, this germ has the property of assuming such excessive virulence as to penetrate even the normal intestinal mucous membrane. Its virulence is enhanced by successively passing through susceptible infants. In the Bethesda Foundling Home epidemics of enteritis have been noticed, undoubtedly due to

this germ. In one epidemic particularly a gradual increase in the severity and mortality of the disease occurred, the period extending over two months. Dr. Fisch found the colon bacillus in the mucous membrane and predominating in the feces. Occasionally, too, a very sick infant with bacillary diarrhea is admitted to the Foundlings' Home, and this forms the nucleus of an epidemic.

At present greater stress must be laid on infection by other means than milk. Uncleanliness of the babies' mouth, hands of the nurse, dirty hands of the infant, playthings, clothes, all these seem to be a very frequent, and I must say the most frequent, method of conveying the poison.

To Heubner is due the credit of establishing this fact, and sterilization of milk as an effective prophylactic measure has received a terrible blow. To regard all acute intestinal diseases as acute milk infection is a common, but grave error.

Escherich has also shown that in these cases of colicocolitis the Gruher Widal test is positive. But, in order to get the agglutinating test, it is necessary to use the particular bacilli which are in the intestinal canal at that time. This has been one of the most important proofs of the pathogenity of the common colon bacillus.

Probably in this class also belongs Gärtner's bacillus.

Escherich and his pupils lay great weight on the virulence of the streptococcus enteritis. It also penetrates the mucous membrane, and causes an enteritis, the morbidity of which has wide limitations. It is questionable, however, if to this can be assigned the importance as to the colon bacillus.

Another germ which causes enteric disease in infants is the bacillus typhosus of Eberth. The symtomatology of typhoid fever in infancy is so similar to some forms of colicocolitis that a differential diagnosis is usually impossible. I need only refer to the cases recently published by Griffith. Last summer, too, a case came under my care, in which the Widal test was strongly positive. The infant was 13 months old, and had symptoms of chronic ileo-colitis. In post-mortem work, too, I have several times found the typical typhoid ulceration in infants.

The staphylococcus pyogenes must also be placed in the pathogenetic bacteria of the intestine, also the bacillus pyocyaneus. Ordinarily these bacteria are destroyed, but rarely

conditions favorable for their growth are present. On the doubtful list are a great class of micro-organisms, such as the bacillus enteriditis sporogenes.

The virulent bacilli, a, d, and x, of Booker are probably only varieties of the colon bacillus.

The pathology is not complete without a study of the susceptibility of the infant. It is a fact well recognized that artificial foods confer little or no immunizing power, while the infant that is breast fed shows marked resistance. It is common in an asylum to find a similar infection to be very mild in the breast-fed infant and lethal in that reared on the bottle. The depressing effect on bacterial resistance induced by foul air and heat are sufficiently proved by Meinert's paper.

In fact so many intestinal toxemias or infections are dependent on the simultaneous or successive introduction of many poisons. I need only relate the instance of an infant that was kept in a closed, over-heated room, and in a very short time became cyanotic from foul air intoxication, this was followed by indigestion, with local poisons, and on the fourth or fifth day an infection of the intestinal walls, to which it succumbed.

Thus each disease is a study in itself, as the multiplicity of poisons make the cases innumerable.

The practical import of this discussion may be summed up in the following:

1. Putrefaction of intestinal contents may be controlled by dieting, the prognosis depends on the destruction of intestinal cells.

2. A true infection of the intestinal wall cannot be cured by a particular diet or antiseptic, but must run a more or less definite course, when the tendency to recover spontaneously is present.

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INFANT FEEDING.

By A. W. KRATZSCH, M.D.,
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AMONG the different causes of infantile disease, and therefore of infantile mortality, none perhaps figures more prominently than improper feeding. This does not necessarily imply that an infant be deprived of its natural food by nursing its mother. An infant may receive good wholesome milk from a perfectly healthy mother and yet be improperly fed. When the mother has sufficiently rested from the hardships and fatigue of labor her infant should be applied to the breast. This will be from four to six hours after labor, and, as a rule, the breasts contain a small amount of milk, enough to satisfy the child at this time. The full amount of milk does not appear until the third day after birth, but its appearance is hastened by repeated nursing on the first and second day. If nature intended that the infant should have more food during its first few days of life, this period of scanty milk secretion would certainly be absent. Still, if the infant shows signs of thirst or is quite uneasy, it may be given a little water, a little milk and water (one part of milk to six of water), or, if very noisy, a little good brandy very largely diluted with water.

The stomach of a new-born child holds but little, and it is therefore necessary to feed it very frequently during its first month of life. It should nurse every one and one-half to two hours during the day time and every three to four hours during the night.

As the child grows older this interval between feeding should be lengthened, so that at the age of six months nursing will take place about every four hours, and small quantities of artificial food given several times a day. The time devoted to each nursing should not exceed twenty minutes and should be followed by a thorough washing of the nipples. A pernicious habit, indulged in by many mothers, is that of nursing their babies the moment they cry or become restless. Still, others train their infants to nurse all night, claiming that by so doing both they and their babies rest much better.

These habits are to be discouraged, for they violate all rules of regularity about feeding, and in most cases develop an indigestion with all its accompanying disorders. There is no fixed age at which infants should be weaned, and some mothers are known to suckle their babies until they are three years of age and older.

The appearance of the canine teeth at about the fifteenth to the twentieth month is an indication of the child's ability to masticate soft food, and weaning may be begun. Weaning should not be done abruptly so as to force a sudden change of diet upon the child. It should be taught to be fed with a spoon from time to time during the daytime and nurse less often, so that the transition from natural to artificial feeding, does not impress the child unfavorably. It is advisable to defer weaning until after the summer months, especially in cities, because of the child's predisposition to attacks of bowel trouble during this period of the year.

What I have stated so far refers entirely to infants who are not deprived of their natural food obtained in the natural way. It so often happens, however, that a child is deprived of its mother at or near its birth, or that through a variety of causes the mother is unable to suckle her infant early after its birth, and recourse must be had to artificial feeding.

The wet-nurse affords the most typical substitute for the mother in the feeding of an infant. Since she cannot be obtained in the large majority of cases, some other food simulating as closely as possible mother's milk is obviously required. We read announcements in every journal and newspaper, and we see on the shelves of every apothecary shop, numerous artificially prepared articles in both liquid and solid form, claimed to be "just the food the baby needs to thrive and do as well on as if it nursed its mother."

It is useless to remark that the large marjoity of these productions are useless for the purpose for which they are intended. The only kind of milk the most readily obtained and which resembles as closely as possible human milk is that of the cow.

This differs from human milk in the percentage of the different ingredients it contains, being richer in butter, casein, and salts, and contains less sugar and water. Milk from old cows is less nutritious than that from younger animals and is also more liable to be diseased.

It should be obtained from a herd of healthy young cows, instead of from a single animal, because a mixture of milk from different cows is quite apt to be uniform in quality from day to day, while that from a single cow may vary daily, according to changes in her general condition.

The dairy should be regularly inspected by a competent veterinarian, and no milk should be allowed to enter the market from premises where contagious diseases exist. Whether cow's milk had better be boiled or given in a fresh state to infants has advocates for and against.

Nevertheless, it is advisable to boil or sterilize all food and drink given artificially-fed infants during at least the hot season of the year. Milk given an infant should be alkaline in reaction, and while milk from grass-fed cows is alkaline, that from barn-fed cows is acid, and should be made alkaline by the addition of lime water or soda.

A teaspoonful of a solution of 1 dram of sodium bicarbonate to 6 ounces of water, given with each feeding, is a simple mode of producing this effect.

It has been my experience that milk from cows fed on green corn during the Fall of the year almost universally causes bowel disturbance in bottle-fed infants. A uniform temperature of the milk at about 99° F is most agreeable to the child's stomach. Very few young infants can tolerate pure cow's milk on account of its variance from mother's milk in the proportion of its different ingredients. The larger amount of proteids, fat, and salts can be properly reduced by the addition of water, while the deficiency of sugar can be supplied by the addition of milk-sugar, or, possibly, cane-sugar. New-born infants require a dilution of one part of cow's milk to five of water.

This proportion should gradually change, so that at about ten months the infant receives the milk pure. An even tablespoonful of milk-sugar dissolved in boiling water and filtered, is the proper quantity for about eight ounces of food. This solution of milk-sugar must not be allowed to become older than one day at most. The regulation nursing bottle, sold at the shops, should absolutely be discarded in favor of an ordinary three, four, or six-ounce vial, according to the age of the child, and an ordinary rubber nipple. Mothers and nurses, as

a rule, are not sufficiently scrupulous in cleansing the complicated arrangement of the regular nursing-bottle and in this way feed their babies unwholesome milk.

I usually instruct my families to have several rubber nipples on hand, so as to at least have one lying in a borax or soda solution while the other is being used. They are easily cleansed and therefore furnish no source for contamination. It frequently happens that babies cannot tolerate cow's milk at all, even when prepared to resemble mother's milk, as nearly as possible. If the milk is given sufficiently diluted to be easily digested the little ones wilt away, become emaciated and display all evidences of malnutrition.

Or, on the other hand, if given more concentrated, it will form large curds, cause vomiting, diarrhea, or obstinate constipation, also attended by non-assimilation and malnutrition. Such children, as a rule, do well on condensed milk. I invariably prescribe what is known as Anglo-Swiss condensed milk, marked on each can, "Prepared in Switzerland," and I never have trouble.

Whenever in my practice any other brand of condensed milk was procured, either by mistake or because the brand ordered could not be obtained, the little ones invariably failed to improve or grew worse, while a return to the favorite brand would soon be followed by a healthy digestion.

Children brought up on this brand of condensed milk have all the appearance of perfect health, and the prejudice so often heard against this form of infant food must arise through the employment of inferior brands. Whatever the food of an infant may be, if at any time it shows evidences of indigestion, or becomes affected with one of the different forms of diarrheal trouble, it is always best to introduce a change of food. This alone often corrects the disturbance. The mother may begin to menstruate during the early months of lactation, or she may become pregnant soon after the birth of her child.

In the former instance she may suffer such systemic disturbances as to change her lacteal secretion sufficiently to injure her child. The little one may have severe attacks of indigestion and even go into convulsions. Here a substitute must be employed during the days of menstruation, and a day or so thereafter a return to the breast may be made.

During this period of suspension of nursing the breast-

pump must be regularly used to keep up the secretion of milk. In the case of early pregnancy it will be necessary to wean the child entirely, both on account of the deranged condition of the milk, and also on account of the drain which lactation produces upon the mother.

Tuberculosis in the mother or an inability to suckle her child on account of the wasting and debilitating effect it produces on her, are also reasons for weaning. Acute diseases in the mother do not necessarily call for weaning of the child, unless the disease extends over too long a period of time.

In this instance the secretion of milk will be too scanty to supply the wants of the child, and one of the numerous substitutes must be added to compensate for the deficiency. Milk from a healthy mother with sound breasts is practically sterile, while a fissured nipple or an inflamed breast may be the cause of severe digestive disturbance in the child. If at all possible, milk should constitute the chief article of food during the first year of life and one of the chief articles of food during the entire period of infancy. At the age of 6 months small quantities of farinaceous food may be given with the milk diet. Later the softer kinds of solid foods, such as oatmeal, gruel, or rice, well cooked, and small quantities of beef broth may be added, so that at the age of from 12 to 15 months the food will be of greater consistence. Crackers and stale bread may now be boiled in water or beef broth and fed with a spoon. Small quantities of baked potato with butter and salt, and, perhaps, a little soft egg, also agree well at this time. Vegetables should not be given during the first year of life, and sparingly during the second.

The child has now all its incisors and some or all of its molars, and is prepared to chew soft meats in small quantities. To this may be added during the close of the second year, puddings of rice, cornmeal, sago, etc. Milk, however, should be given with regularity at meals, and draughts of cool water between meals to allay thirst. At the age of $2\frac{1}{2}$ to 3 years all the teeth have made their appearance, and the child may now gradually acquire access to the general table. However, on account of the entire absence of will power, the child is placed at the mercy of its stomach, and the kind and quantity of food taken by it should for some time to come be regulated by the parents or nurse.

COLIC.*

By PHILIP F. BARBOUR, M.D.,

Professor of Diseases of Children in the Hospital College of Medicine,
etc., Louisville, Ky.

INTESTINAL colic is sufficiently common to require some consideration. There are many favorite prescriptions for its relief, and it is for the purpose of bringing out such formula that this brief paper is presented.

Intestinal colic occurs most frequently, of course, in infancy. It interferes more with the comfort of a family, not to speak of the patient, than many more serious diseases. The nurses and the old women make many varieties of colic—three months' colic, six months' colic, etc.,—but they are merely aggravated examples of a disease which is wholly preventable by proper dietary or proper medication.

Colic is a paroxysmal pain occurring in the intestines. It may be due to a number of causes, such as appendicitis, intussusception, enterocolitis, or to lead or arsenic poisoning, but the most frequent cause is a disordered digestion arising from improper food or deranged conditions of the alimentary tract. Infants are more prone to have it from the fact that their food is more difficult of perfect absorption, and hence is more liable to undergo fermentation; and the relative weakness of the muscular fibres of the intestine and the abdominal wall prevents the rapid expulsion of the gas, the accumulation of which gives rise to the pain. Colic may, however, occur without flatulence and can be caused by whatever will produce a sudden spasm of the circular muscular fibres in the intestinal wall.

Unfortunately for the physician, colic comes on most frequently at night. Its recognition is however, usually easy, as the loud, sharp cry indicates pain, and as the pain is paroxysmal, the cry is not continuous. The baby also draws its cold feet and hands over the abdomen, which is usually distended

*Read before the Falls City Medical Society, Louisville, Ky.

and tympanitic. With the expulsion of the gas the colic ceases and the attack is usually over for the night.

It may be difficult at times to distinguish between the cry of hunger and the cry of colicky pain, for these babies will often seize the nipple with avidity, and the warmth of the milk frequently relaxes the spasm for a little while; but with colic the pain soon returns and is probably more severe. The cry of hunger is not so loud, and is maintained longer, while the head is rolled from side to side, the tongue drawn back and flattened in the mouth, and efforts may be made to suck the hand, or thumb, or nightgown.

The cry of temper often simulates colic, but there is not the abdominal distension nor the cold hands and feet which are always present in true intestinal colic.

The possibility of the presence of appendicitis, intussusception, volvulus, incarcerated hernia, hepatic and renal colic, should always be kept in the mind, and no such mistake will occur when one is careful.

There is a form of enteralgia due to malaria which is often quite difficult of recognition, and, in fact, could be suspected only where there is a marked periodicity without the accompanying symptoms of ordinary colic—the tympany and the cold extremities. The fact that colic so frequently comes on at the same time every night will make its differential diagnosis more difficult. So that the diagnosis of malarial enteralgia is usually reached by a process of exclusion.

Still other forms of painful affections of the bowels may occur in older infants or in children, as where pain comes on shortly after eating, in children suffering from chronic intestinal indigestion. Small doses of liquor potassi arsenitis well diluted seem to relieve these cases most promptly.

Children who are fed on cornbread that is not thoroughly cooked, or who are fed certain other forms of indigestible food such as cold lunches with pickle, etc., often suffer from colicky pains in the hypogastric region. These pains are not very severe and yet the child feels like bending over or making pressure on the lower part of the abdomen, and possibly does not get perfect relief under several hours. For such cases I have found very small doses of castor oil, taken after meals, to give almost perfect relief. Of course dietary errors must be corrected to secure any permanent improvement.

Spinal caries may also produce abdominal pain simulating colic, but the careful diagnostician would not fail to recognize such a condition when present. Finally children often refer all chest pains to the abdominal cavity and complain of pain about the navel. None of these last mentioned conditions, however, would be classed as colic, though the unwary might be misled by them.

The treatment of colic requires the immediate relief of the pain and attention to the diet so as to prevent its recurrence.

The use of warm enemata will usually remove the gas, which is, for the most part, in the colon. The enema may be of soapsuds and water, or may contain a few drops of turpentine, or a half teaspoonful of glycerine. Hot applications should also be made to the abdomen and the feet and hands be warmed at the fire or by the hot water bag. It is a popular notion that if the baby's feet are kept warm it will not suffer from colic.

A number of different remedies have been recommended for use by the mouth. I prefer small amounts of hot whiskey and water with a drop of essence of peppermint and a little sodium bicarbonate.

The late Dr. Larrabee used to recommend one of the following combinations:

℞	Spirit ammonii aromat.....	m. vi
	Sodii bicarbonatis.....	gr. xii
	Syr. rhei aromatic.....	℥i
	Aquæ carui.....	℥i ss
M. ft. sol.	S. teaspoonful p. r. n.	

Or the following:

℞	Tr. asafetidæ.....	m. xv
	Ol. cajeputi.....	gtt. ii
	Magnesiæ carbonat.....	℥ ss
	Syr. acaciæ.....	℥ ss
	Aquæ anisæ.....	℥i ss
M. ft. mist.	S. Teaspoonful p. r. n.	

Some form of cathartic should be administered after relief

of the urgent symptoms so as to rid the bowels of the undigested food or other substance which initiated the attack.

The aromatic antiseptics, when given diluted in hot water are often of service in relieving the paroxysm and preventing the formation of gas.

The prevention of colic embraces the whole question of infant feeding and only a few salient points can be selected from that large subject.

The most frequent cause of colic is the presence of too much proteid in the milk, as is evidenced by the stools containing undigested casein or having the cheesy odor. This is the great fault of the bottle-fed food; it is too rich in casein and too deficient in fats. Breast-fed children are almost as liable to colic, for a number of different factors, such as excitement, anger, menstruation, etc., may increase the proteid percentage in the mother's milk. In habitual colic, diminish the proteids.

Excessive amounts of fat are rare, and usually not productive of colic, but excess of sugar undergoing lactic acid or acetic acid fermentation is frequently a cause of colicky pain. Children fed on condensed milk are often colicky. Excess of sugar will occur only in bottle-fed children, as in mother's milk it seems to remain almost at a fixed percentage, and its proportion cannot be altered so readily as can the percentages of fat and proteid.

Milk which has been frozen is particularly liable to produce colic, though I do not know what change is thereby produced in the milk.

The stomach of the infant secretes pepsin and hydrochloric acid in much smaller quantities proportionately than the adult, but there is a great deal of mucus formed by the mucous membrane of the stomach.

By reason of faulty feeding, or as happens among the lower classes, the drinking of beer, this mucus is formed in larger quantities and passes into the bowel as a good culture medium for bacteria. Accordingly, the bacteria multiply very rapidly and produce fermentation of the milk or the food with a corresponding increase of gas in the intestines, and hence colic results. In such cases I have found alkalies very useful,

as they liquefy and wash away the mucus and so prevent the development and growth of bacteria.

It may be necessary to prescribe some form of anodyne to relieve the pain of the colicky attacks until such changes have been consummated in the milk as will prevent its disagreeing with the child. Occasionally therefore it may be necessary to give some form of opium.

Of the preparations of opium, codein is decidedly the best as it interferes less with normal digestion and peristalsis than any other form of opium medication. At the best, however, opium by its interference with the gastric and intestinal secretions tends to keep up the colicky condition and should be used only as a last resort. The various soothing syrups, cordials, etc., usually contain opium and should be tabooed.



NOTE ON AN EPIDEMIC OF MALIGNANT SCARLET
FEVER OCCURRING AT CLEARFIELD, PA.*

By S. D. BAILEY, M.D.

I N offering some remarks on this special form of scarlatina, it will be necessary to trust my memory, as I kept no special record of any case. Having treated over 100 cases of the more ordinary type with a mortality of 4 per cent., I am bold to assert that the epidemic of which I speak, from start to finish, was a true type of the malignant disease; the mortality ranging from 40 to 50 per cent. at first, growing less toward the latter third of my cases.

The epidemic began in an old tenement house in which scarlet fever had previously existed, without its being cleansed or fumigated. Here moved a debilitated old man, his daughter, and grandchild. The child was taken suddenly with vomiting, serious purging, delirium, temperature ranging from 105° to 107°.

A coarse, discrete purple rash appeared in a few hours and remained atypically until the stage of desquamation. The tongue was brown, dry, encrusted, cracked, and greatly thickened, as well as deeply congested; somewhat similarly the nasal and pharyngeal mucous membranes, indicating an alarming condition.

In three days the old man was taken ill. An abrasion on the left forearm showed a marked erysipelatous area of inflammation, spreading rapidly to the shoulder with edema and threatening gangrene, from which condition he died in a few hours.

Before the child ceased desquamating he was allowed to play with some neighbor children. Six children and two adults, mother and aunt, in the one household, contracted the disease, four of the children dying—the aunt dying in less than forty-eight hours. Two of the children were unconscious and two semi-conscious when I was first called. One was lying with his head somewhat retracted; eyes widely dilated, dull, and glassy; pupils dilated; breathing laboriously; passing urine

* Read by title at the meeting of the Pennsylvania State Medical Society, in Lancaster, Pa., May, 1898.

involuntarily; and voiding green, serous stools; all sphincters relaxed, and a temperature of 101° , soon followed by deepening coma and death. One died with suppression of urine in the middle of the third week. Another died from gangrenous inflammation in the glandular structures of the neck. A fourth one from general septic infection.

In the next family affected, three cases out of four died. These were similar to the cases just mentioned. These people, living outside the borough, did not come under the control of the Board of Health.

From these cases the disease spread beyond into the country and into the town, until there were between 200 and 300 cases.

Two children, taken sick across the street from my office, at midnight, were dead in less than ten hours in convulsions, the temperature in the rectum showing 108° F. The father of the children was a shoemaker. A pair of shoes of a child who had had scarlatina were brought for repairs; his children, having handled the shoes, contracted the disease. The father was a chronic alcoholic.

When first called to see another family I found one dead child and six others ill with disease, no more of whom died. The house was clean, warm, and the children carefully nursed. The stage of invasion was not so severe.

In a nearby family, with few comforts, there were five ill with severe invasion and many complications, one having ten severe uremic convulsions and recovering. One, aged 14, died from septic infection in three days. This case, I believe, was complicated with diphtheria; the offensive breath was simply unbearable.

Two other children of tubercular parents had deep-seated involvement of nose and throat, and died from septic infection in three days; two others recovering.

Another family of six children, ages ranging from three to fourteen years, were ill at the same time, all recovering, leaving no bad results. I will just state that there were very few bad sequels in any of the cases recovering. The invasion stage was very severe in all, kidney complications occurring in only one.

Owing to the malignant character of the disease, many cases presented no possible hope of recovery. Many who sur-

vived the invasion stage died later from septic infection, tissue changes, glandular involvement, and organic inflammations. It was in this class of cases that a later change in my plan of treatment saved life and proved otherwise beneficial, the chief being the early control of inflammation in the neck and its serious consequences by the constant application of lead water and laudanum.

The best results were obtained by endeavoring to bring about judicious reaction, reducing hyperpyrexia, stimulating as well as modifying functional activity, combined with careful nursing, the application of weak, non-irritating antiseptics to mucous membranes, and moderate stimulation—the best drugs being quinine, iron, strychnine, and digitalis. These remedies were varied, according to the special indications, and the type of constitution and surroundings of the patient. There being no specific for the disease, I believe the chief aim in treatment is to modify over functional activity so as to reduce the amount of inflammation and its results to the minimum. To do this, the treatment must be timely, suitably and cautiously given.

I will name the few remedies, without comment, which gave me the best results: Hot mustard foot-baths, cold and tepid spongings, cold to head, sedatives, diuretics, diaphoretics, combined with gradual stimulation when indicated, and antiseptic unguents. I do not use drugs unless positively indicated. In the very early stage, tincture of aconite root, citrate of potassium, acetate of ammonium, chloral hydrate, when called for by the symptoms. Salicylic acid in small, often-repeated doses, is very useful, which, I believe, “prevents complication.”

From the beginning to the end of all inflammatory conditions in the throat and neck, the constant application of lead water and laudanum on absorbent cotton was kept freely applied. This is the only remedy I have ever found that favorably controls these conditions, and that it does most successfully. If I can impress you with this important clinical truth, and to the use of this well known remedy, I shall feel my effort in presenting this paper has not been in vain.

EDITORIAL COMMENTS

Typhoid Fever in the United States, and the Infection of Children

For many years typhoid fever has had a widespread notoriety in this country, and has attracted a very considerable amount of attention, compelling many communities in sheer self defense to take measures to control its destructive inroads. Statistics of the mortality from typhoid fever within the past few years are appalling in their significance, and should tend to arouse even the most indifferent to a sense of the constant menace to the public health exercised by this fell disease. Dr. G. J. Hirth, of Milwaukee, in the *Medical Times*, June, 1898, states that in 1896 it was shown by the census that 75,000 deaths occurred directly and indirectly from typhoid. In Philadelphia the first three months of the year 1898 witnessed the death of 1,713 of its inhabitants from the same malady, and at the present a violent epidemic of typhoid is playing great havoc in that city. The awful death rate among our soldiers in camp during the late war with Spain is too fresh in our minds to need much dwelling upon. Dr. Osler, in his eloquent address to the Medical Society of the State of New York, on February 1st ult., puts the situation in these forcible words: "Last Autumn this nation, in the moment of victory, had a rude awakening, a sudden conviction, a hard lesson. A voice like that heard in Ramah went up throughout the land—'lamentation, and weeping, and great mourning.' From Montauk Point to San Francisco, from Minneapolis to Tampa. Rachels weeping for their lads." The saddest and most discouraging feature of this condition of things is that with proper sanitary precautions this holocaust might have been almost entirely prevented, and the same may be said in regard to those places where typhoid fever is endemic. As Professor Osler says, the solution of the problem is easy. What has been

done in many parts of Europe can be done here; the practical conviction of the people is all that is necessary. This fact has been proved times without number. Munich, Hamburg, and Berlin stand out prominently as striking illustrations. In Berlin, perhaps the cleanest city in the world, typhoid is unknown. Regarding the contracting of typhoid by children, it has been frequently pointed out that ice cream, and especially that delightful comestible, when hawked about on barrows, is a fruitful means of spreading the infection among the young. But a short time ago Professor Boyce, of Liverpool, made a careful bacteriological examination of specimens of ice cream, and found therein an enormous number of sewage bacteria, while some cases of typhoid fever had been distinctly traced to ice cream sold at Liverpool. This is sufficient to show that the indulgences of an early age are not free from risks, and that the opportunity for the gratification of such tastes requires to be attended with much precaution in the manufacture of this much sought for dainty. Whether the germ of typhoid fever infects infants is a point concerning which diverse opinions are held. Dr. Gordon, of Boston, writing on the subject in *Starr's Diseases of Children*, says that no age is exempt, and that statistics vary as to the age at which children are most susceptible to the infection; he, however, thinks that the risk most probably increases up to the tenth year and then remains about the same until puberty is attained. Recently at the Infants' Hospital, Boston, Dr. John Lovett Morse and Mr. Hartley Wales Thayer undertook investigations to endeavor to prove, by means of Widal's serum reaction, the comparative frequency of typhoid infection in infants, and the following conclusions were arrived at:

- 1.—Typhoid fever, as has been commonly believed, is an unusual disease in infancy.

- 2.—It is possible that women whose blood gives a positive Widal reaction, even though it be years after the occurrence of the disease, may in some way transmit this to their infants.

This is, of course, an interesting point, but one which would wholly lose its force if strong and efficient steps were taken to stamp out the disease itself. As we have said before, there are no unsurmountable obstacles in the way; all that is needed to bring about this happy result is that the people of this land should plainly see and appreciate their danger, and should in the country, cleanse the soil on which they live and the water they drink, and that in the cities they should insist upon the authorities performing their duties in the same direction. Dr. Osler truly remarks that the problem will be solved when first every city in the union has a supply of pure water (including ice), and is properly drained; secondly, when suburban and rural hygiene is systematically organized.

The Need of Vaccination

It seems that an object-lesson on the value of vaccination as a safeguard against small-pox may soon be afforded in this country. At the end of January in this year Dr. Reynolds, the Chicago Commissioner of Health, declared that small-pox was epidemic throughout the world to an extent not equaled since 1893, whilst *Public Health Reports*, the official organ of the Marine Hospital Bureau recorded that nineteen States and sixty-three localities in America had been invaded by the disease, and day by day news of fresh outbreaks, especially from the West and Northwest, is reported. In PEDIATRICS the subject of vaccination has recently been more than once the theme of discussion. It has been pointed out how greatly to be deplored was the action of the British Government in virtually repealing, for reasons of expediency alone, the Vaccination Act, perhaps the most widely beneficial law ever made. Attention was drawn to the case of Germany, where, in 1871, with a population of 50,000,000, there were annually lost over 140,000 lives by small-pox, whereas at the present time, since vaccination was

rendered compulsory in that country, the mortality from the same cause has dwindled to an almost nominal figure. History relates how, in the days before the general application of Jenner's discovery, small-pox would decimate entire districts, and that the sight of persons scarred by the loathsome disease was one so frequent as to attract no attention whatever. In Montreal, only a comparatively few years ago, the destruction to life among the unvaccinated by small-pox was awful; it spread unchecked, and in the ten months following February 28, 1888, no less than 3,164 people died and thousands were attacked. The anti-vaccinationists claim that the ravages of the disease have been stayed, not by means of vaccination, but because of the great advances made in both municipal and domestic hygiene. This contention is to a very large extent an idle one, personal cleanliness and good sanitation may effect something in this direction. In the case, however, of a susceptible person directly exposed to the contagion of small-pox, these would be but slender reeds on which to lean. Effective vaccination is the only reliable safeguard. Much of the objection urged formerly against vaccination was for the reason that it was often carelessly performed, and that the lymph was frequently not aseptic, and consequently calculated to induce infection. In many instances these objections were justified by the results, and an unreasoning prejudice was thereby aroused in ignorant minds against vaccination. With the introduction of carefully prepared glycerinated vaccine lymph, all fear of danger from these sources has been completely eliminated, and if lymph thus prepared is used in place of the old-fashioned points, no unpleasant effects, such as sore arms, fever, or scars will follow vaccination. Nevertheless, the fact should always be borne in mind that it is necessary that the lymph should be procured absolutely pure. We would earnestly impress upon the minds of our readers that vaccination does not only concern the individual, but is a matter of the highest importance to the public at large, and parents,

guardians, and employers who do not insist on its performance are guilty of a grave dereliction of duty.

**Foreign Countries and
Vaccination**

There are signs that in England a revulsion of feeling in favor of vaccination is already taking place. And it is not unlikely that the Government will be pressed to amend the existing laws. The glycerinated calf lymph supplied by the State vaccine department has given unlimited satisfaction, and medical men from all parts of the country testify to its efficacy. The advantages of glycerinated vaccine lymph over the ordinary form of calf lymph is well set forth in the excellent Milroy lectures for 1898, by Dr. S. Monckton Copeman, and which have been recently issued in book form. Reference was made above to the marvelous effect of vaccination in checking small-pox in Germany. During the debate on the budget in the parliament of that country and on the occasion of the vote for the funds to support the Imperial Board of Health, a medical liberal member requested Count Posadowsky, the minister, to be vigilant against any proposed alterations in the great principles of the German vaccination law, and, above all, to maintain compulsory vaccination. Statistics proved that the cases of illness following on vaccination had decreased to an astounding extent, owing, no doubt, to the present improved methods, Count Posadowsky replied that the Federal Government of Germany did not contemplate any change in the principles of the vaccination law, but only in some of the details of execution, such as the manufacture and preservation of lymph. In go-ahead Japan, according to the *New York Medical Record*, the parliament there has passed a bill authorizing the free distribution of vaccine virus, and rendering vaccination compulsory. It is provided that a child must be vaccinated within ten months of its birth, and that if vaccination does not take, it must be repeated within a period of six months and yet again

within a similar period if it be again unsuccessful. Further, all children must be re-vaccinated at the age of six and once more at the age of twelve. Thereafter the vaccination becomes occasional and may be declared compulsory at any time of threatened or actual epidemic, the power to order it being vested in local governors. From France, Austria, and Italy the evidence in support of the efficacy of vaccination is overwhelmingly conclusive, as indeed it is in every country into which it has been introduced. Therefore it seems probable the anti-vaccination movement will be short lived. In the meantime, however, the believers in vaccination must not be caught napping, but should, by a careful performance of the operation, with the purest glycerinated vaccine lymph procurable, endeavor to dispel any prejudice that may exist against it.

**Vaccination as Viewed
Through the Spectacles
of a French Journalist**

It is curious, and at the same time sad, to notice how sometimes a brilliant man will be led away—by his passions, or perhaps to gain some end—to write upon a subject concerning which he is completely ignorant. M. Drumont, the most versatile and able journalist in France, has lately delivered himself of a scathing indictment of vaccination, and has promulgated a new theory in regard to small-pox. In fact, he has done his best to whitewash that dreaded malady, and to prove that really it is a blessing in disguise. M. Drumont's remarks are so funny that we will quote them from the *Progrès Médical*: "I am convinced that the Englishman, Jenner, who invented vaccination, was one of the greatest human evil-doers. Small-pox was never a disease. We see in it an admirable working of the organism, a voluntary operation of nature which energetically excretes, drives out and gets rid of the evils of the human body. Study closely the symptoms of croup, typhoid, and consumption, and you will recognize that these diseases are nothing else than the

results of driven in small-pox outside in. All that the savants of the Academy say about it is sheer nonsense. There has been bacilli, as there have always been thievish stock brokers, but of old the bacilli were allowed to be excreted by small-pox, and the speculators were hanged at Montfaucon. The bodies, both human and politic, were all the better for it. Now the morbid matter, which must find its way, produces cancer or brain inflammation, turns up here and there, attacks the brain in one and the lungs in another. Thus is explained the incredible growth of insanity, ten-fold in a century, and the perpetually increasing number of suicides, which are due to insanity. Finally, these considerations are adduced to those whose minds are educated and ripened by independent thought. The great mass will go on believing Jenner was a great man, and having their children vaccinated." M. Drumont, if he had not made his mark as a writer, would doubtless have taken a high position among the quacks. His ideas are bold, original and characterized by much ingenuity, and are such as would commend themselves at once to the minds of the ignorant and unthinking. It must not be forgotten, however, that M. Drumont is a Parisian, and possibly in his remarks is embedded some deep buried satire.

SOCIETY REPORTS

NEW YORK ACADEMY OF MEDICINE—SECTION ON PEDIATRICS.

Stated Meeting, March 8, 1899.

HENRY KOPICK, M.D., Chairman.

Three Steps in the Tubercular Process in Children.—

Dr. DAVID BOVAIRD read a paper with this title. The facts presented were drawn from observations made in the autopsy room of the New York Foundling Hospital. Inasmuch as more than three-fifths of the children are cared for outside the institution itself, in the humblest homes of the city, it seemed fair to assume that whatever peculiarities in the life history of the remainder that might be due to the surroundings and regulations of institution life were fairly neutralized; and the conditions, found from observation of the material met with in the hospital, might doubtless be considered as fairly representative of those conditions mentioned among the children at large in this community.

First—The Primary Lesion in Tubercular Children.—In 1891 Dr. Northrup published in the *New York Medical Journal* an article entitled, "Tuberculosis in Children: Primary Infection in the Bronchial Lymph Nodes." In a series of 125 autopsies on tubercular subjects, he found 13 cases in which the tubercular lesion was confined to the bronchial lymph nodes; 9 in which the tubercles were limited to the bronchial nodes and lungs; 42 cases of general tuberculosis, in which the only cheesy masses were in the bronchial lymph nodes, and 20 cases in which the oldest lesion was in the respiratory tract. Of the series of 125 cases, he considered 88 to be examples of primary infection of the bronchial lymph nodes; 3 of the mesenteric lymph nodes, and 34 intermediate.

His own contribution to this subject was based upon the records of a further series of 75 autopsies on tubercular subjects in the same institution. Four cases showed a tubercular lesion

of the bronchial nodes alone, and in none of these did the tubercular lesion stand in direct relation to the cause of death. With one exception there was no other case in which the tubercular lesion was confined to one particular anatomical area. In no case were tubercular lesions of the intestines or mesenteric nodes discovered without accompanying tubercular lesions of the lungs and bronchial lymph nodes. In the great majority of cases the tract within which the primary lesion must have been born could be determined. The avenues by which the tubercle bacillus may be admitted into the system are:

- 1.—The placenta.
- 2.—Wounds of the surface of the body.
- 3.—The intestinal tract.
- 4.—The respiratory tract.

In none of the cases were there found evidences of the entrance of the infection by either of the first two routes. In none of the 75 cases in which tuberculosis was found in the body did they fail to find tubercular lesions of the bronchial nodes. In 60 of these 75 cases evidences were found that the entrance of the tubercular infection took place through the respiratory tract, the primary lesion being either in the lungs or bronchial lymph nodes. In 8 cases the lesions of the bronchial and mesenteric lymph nodes were so nearly alike that the question of priority could not be determined. In 7 cases the records were not complete.

Second—The Early Clinical Manifestations.—In none of the cases in which the bronchial lymph nodes had been alone affected had a suspicion been entertained of the existence of such a process until the lesion has been found at autopsy, death having occurred from diseases which had no relation to these nodes.

The physical signs usually given as indicating their presence were regarded as insufficient for practical purposes. Dulness over the upper part of the sternum, even if present, is more often due to the persistence or the enlargement of the thymus gland than to the enlarged bronchial or mediastinal nodes. The presence of the venous hum over the manubrium on hyperextension of the head is rarely found to be of any value. In the service of Drs. O'Dwyer and Northrup, at the

Foundling Hospital, the diagnosis of tuberculosis of the bronchial nodes has never been made.

Tuberculosis long latent in the bronchial glands may be roused and disseminated by the influence of an intercurrent disease, the symptoms of the latter entirely masking the presence of the tuberculosis. This point was illustrated by reports of several cases.

Searching the records of cases for the early evidences of the invasion of tuberculosis, only two of importance were found, viz.:

1.—Progressive emaciation, not explained by any other disease.

2.—Continued elevation of temperature similarly conditioned.

It has become the recognized practice that any child over the age of six months presenting symptoms of marasmus (progressive emaciation) should be carefully watched and examined for some explanation of the wasting, and frequently tuberculosis will be the cause finally determined. Persistent fever, not otherwise explained, is also very suggestive, especially under the age of two years, by reason of the relative rarity of typhoid fever at that age. Cases may be met with which run their course without fever or even with subnormal temperatures.

If local signs are to be found they must be sought for in the lungs. Of the 75 cases, the lungs were involved in 65, the lesion varying from the smallest miliary tubercles to diffuse consolidation of the whole lobe, or of an entire lung, with caseous degeneration and cavities in the final stages. The early manifestations are confined to râles, usually subcrepitant or coarse. It must be frankly admitted that the points suggested for the early diagnosis of the invasion of tuberculosis are insufficient; they may suggest the possibility of the presence of this disease, but they do not differentiate it. The truth is that the great majority of the cases of tuberculosis in young children die without the recognition and often without a suspicion of the presence of the lesions; they are most often confused with chronic broncho-pneumonia or entero-colitis.

Third—Complications and Terminal Lesions.—These are found either in the extension or intensification of the local

process in the lungs and bronchial lymph nodes, or in the general diffusion of the tubercular infection. In some cases the softening and formation of abscesses in the bronchial lymph nodes has led to death either by extension of the process to the lungs, or by rupture of the abscess into either the esophagus or trachea. More often the process in the lungs leads to the formation of large areas of consolidation, and finally of cavities, the child dying of exhaustion. Cavities were found in 25 of the cases. The final stage is more often reached by the dissemination of the tubercular infection. A general miliary tuberculosis was recorded in 52 of the cases. Little is known of the process by which this dissemination is brought about, but it evidently may occur by the communication of a caseous nodule in the bronchial nodes or lungs with a blood vessel or lymphatic. The kidney was involved in 13 cases; the spleen in 37 cases; the liver in 28 cases; the heart in 1 case; the pericardium in 2 cases; the peritoneum in 6 cases; the adrenals in 2 cases; and the brain in 22 cases. In 22 cases were found tubercular meningitis; in all but two cases the meningitis was either a part of a general miliary tuberculosis or was accompanied by advanced changes in the lungs—hopeless cases.

To summarize briefly the points:

1.—The primary lesion of tuberculosis in children is regularly found in the bronchial lymph nodes or lungs. Combining Northrup's series with that included in the paper, we have—

INFECTION BY RESPIRATORY TRACT.

	Northrup's cases.	Bovaird's cases.	Total.
Infection by respiratory tract (bronchial nodes or lungs. . . .	88	60	148
Infection by mesenteric lymph nodes.	3	0	3
Intermediate.	34	15	49
	125	75	200

2.—The early manifestations in children of tuberculosis are extremely indefinite and uncertain.

(a) Tuberculosis of the bronchial lymph nodes alone cannot be diagnosticated with certainty.

(*b*) Latent tuberculosis is often aroused and disseminated by the invasion of another disease, such as measles or diphtheria, the presence of tuberculosis being recognized only at autopsy.

(*c*) The common type of tuberculosis in children is acute miliary tuberculosis: it may occur in well-nourished children.

(*d*) The course of tuberculosis is most often confused with chronic broncho-pneumonia or entero-colitis.

(*e*) The early manifestations, if any, are progressive emaciation, fever, and râles over the lungs; these are insufficient for purposes of differentiation.

3.—The terminal lesions comprise:

(*a*) Extension of the tubercular process in the bronchial lymph nodes and lungs, resulting in the formation of abscesses and cavities—chronic pulmonary tuberculosis.

(*b*) Diffusion of the tubercular infection, constituting acute miliary tuberculosis, the principal viscera being involved in the following order: spleen, liver, kidney, heart. Involvement of the brain is most frequent, the meningitis being regularly fatal.

(*c*) When bone is involved and prolonged suppuration follows, waxy degeneration of the viscera may occur.

Stereopticon Illustrations.—Dr. WILLIAM P. NORTHRUP then illustrated, by means of stereopticon views, the pathological points of Dr. Bovaird's paper. Among others, he showed the first lesions of tuberculosis. He said that he liked to think of tuberculosis as a malignant tumor, and the first illustration showed a collection of cells characteristic of the first stage in malignant tumors. He next showed a section of the alveolus of a lung, with a grouping of cells which was going on to softening in the centre, this also being characteristic of malignant tumors with cheesy degeneration in their centers. First the breaking down of the cells, and later the granular masses, passing through the stage of coagulation necrosis, were illustrated. Interesting drawings of sections of liver, arteries, veins, brain, mesentery, etc., were placed upon the screen; also a slide showing a streptococcic broncho-pneumonia, resulting from a double infection from measles and diphtheria, and presenting appearances very similar to a tuberculous broncho-pneumonia were shown.

Dr. R. G. FREEMAN said that all the bacteria carried into the air passages by dust find lodgment on the mucous membrane, and inflammation or abrasion of this mucous membrane in some part of the air passage may offer an opportunity for the invasion of the human organism by some germ. The point of invasion depends upon the point of lodgment of the bacteria, and the point of inflammation or abrasion of the mucous membrane. It is still a question whether the tonsil is a port of entry of primary tuberculosis; yet the lymph nodes of the neck may be considered a frequent starting point, and often tuberculosis of these lymph nodes exists where there is no evidence of other tubercular lesion. The frequency of tuberculosis arising by inhalation is well established. Whether tuberculosis is ever due to the ingestion of food containing the tubercle bacilli is a matter that admits of more discussion. He did not believe that anyone in New York had seen cases at autopsy evidently due to intestinal infection. Eminent European observers take an entirely different view. Many cases seen at autopsy, with considerable involvement of the intestinal lymph nodes, seemed to the speaker to be more likely due to intestinal infection than to that through the respiratory tract. Dr. Prudden, in hundreds of cases of intra-tracheal injections in rabbits, did not recall one of involvement of the mucous membrane of the intestines. Tubercle bacilli, that gain access to the body by the intestine, are readily carried by the lymph stream to the thoracic duct, into the superior vena cava, the right side of the heart and out into the lungs. Evidence of infection of the thoracic duct and veins was not often reported, because such lesions were often overlooked. In the opinion of those who are accustomed to look systematically into the thoracic duct and pulmonary veins, in cases of general tuberculosis, these are the common sources of dissemination of the bacilli. It has been proven that living tubercle bacilli can pass through the gastric juice of guinea pigs uninjured, and the fact that we find lesions of undoubted intestinal origin confirms this fact, that they can pass through the human stomach uninjured. Unless they prove rapidly fatal, there possibly should exist lesions in the intestinal tract, of the mesenteric lymph nodes, of the thoracic duct, of the veins, of the liver, and of the spleen. Frobelius found in 416 autopsies in children the intestines involved in about 27 per cent., the spleen

in 86 per cent., and the liver in 88 per cent. of the cases. Schwer, in 123 autopsies, found the intestines involved in 61 per cent. of the cases. The speaker thought that we must conclude that where the lesions found are everywhere advanced, it is impossible to state just where original invasion occurred. In cases of intestinal origin, the lung and bronchial lymph nodes may show early very prominent lesions, yet, as soon as the lung becomes considerably involved, a re-infection of the intestines from swallowed sputum may take place.

In opposition to the opinion that intestinal tuberculous infection is at all common, we have the fact that chemical evidence of such infection is somewhat meagre. Dr. Sims Woodhead reports a case of a dairy in England where three cows were found to have tuberculous disease of the udder. In the institution to which the milk was supplied the mortality from tuberculosis during the last year had been 30 per cent., and during the preceding year 40 per cent. of the total mortality. Brouardel reported that in a boarding-school in which there were fourteen girls, five had contracted tuberculosis from drinking the milk of a tuberculous cow. Ollivier tells of another boarding-school in which milk from a tuberculous cow was used, and in which thirteen cases of tuberculosis occurred. Many other instances were reported.

The speaker believed that inhalation tuberculosis was the much more common form, yet he did not think we were able to say that the intestinal origin was as rare as we may now believe it, since from experiments on the lower animals and from our knowledge of the channels by which the bacilli are disseminated, the lymph and blood vessels, we know that in cases of intestinal infection of tuberculosis the bronchial lymph nodes and lungs are likely to show lesions.

Dr. CURRAN said that his experience in the autopsy room of the Infant Asylum tallied with that of Dr. Bovaird. Regarding those cases in which a diagnosis might have been made, it was a common thing to find pain referred to the child's abdomen, and afterwards to find tuberculosis of the spleen, of the lung, etc., particularly in marantic cases. There were many cases where tuberculosis was not suspected, where there was much emaciation, perhaps, and the child dying of diphtheria or broncho-pneumonia, evidences of a disseminated

tuberculosis were found. In only 10 per cent. of his cases had cavities been found. All cases of enlarged lymph nodes were not considered tubercular without a microscopical examination. He did not think cases should be considered tubercular unless a microscopical examination had been made. Regarding healed cases, the speaker said he had unquestionably had three or four cases in which the tuberculous process had healed. He referred to two children, the pictures of health, who had died from diphtheria, and in whom calcareous nodules had been found, the size of a walnut in one, and in the other a disseminated process. The tubercular process had not been suspected in either case, and yet these calcareous nodules had been found in each instance. He would not attempt to explain it. He had met cases in which there had been intestinal involvement, but never with any in which the lung, or possibly the respiratory tract, had seemed to be other than the seat of the primary infection.



PRACTICAL NOTES

A year ago a physician and pediatricist of New York, KOPLIK, made known an early symptom of measles unknown up to that time. He describes this as consisting in an exanthem of the mucous membrane of the cheeks, which makes its appearance in the early prodromal stage, namely, at a time when measles, as a rule, cannot yet be positively diagnosticated, and whose presence in every case is a positive indication of the following integumental rash. This symptom has been made a special study in Heubner's clinic, at Berlin, and Dr. Stawyk made a report on the result of these observations. In the Winter of 1897 a house epidemic of measles occurred in all the wards of the Charité containing children, and 32 fresh cases of measles were observed. The following data were noted: Out of 52 cases of measles which were turned over to the ward, 45 presented Koplik's spots (86.5 per cent.). Out of 32 cases observed during the house epidemic, 31 presented the same affection. Koplik's spots consist in bluish-white, slightly raised, rounded efflorescences, measuring 0.2 to 0.6 mm. through their diameter, and are usually found in the centre of a reddened portion of the mucous membrane of the size of a lentil. Their site is on the mucous membrane of the cheeks; in a few cases the surface of the mucous membrane of the lips (in one case, also, the mucous membrane of the tongue) was affected. The number of spots is generally small (6 to 20 on each side), in individual cases, however, several hundred have been counted; occasionally the spots are confined to one side. They are most frequently found opposite the lower molars. In examining these cases it is advisable to press the mucous membrane of the cheek forward with the thumb, the mouth being open, while the index finger at the same time draws the cheek away from the teeth, at the angle of the mouth. Daylight or a very bright artificial light is absolutely necessary, as the spots can not be detected under a yellow lamp-light. Koplik's spots, which are hardly ever confluent, will never, after they have been once seen, be mistaken for other affections of the mouth. The spots cannot be removed by wiping over

them; they may, however, be taken out with a pair of pincers, without pain or hemorrhage. Koplik's spots are only met with in measles, never in other diseases. Accordingly they are an absolutely certain diagnostic sign of measles. In every case where they have been observed in the prodromal stage at a time when the diagnosis could not yet be positively made, the exanthem of measles followed unmistakably. These spots make their appearance usually on the first or second day of the prodromal stage. Until the skin eruption appears they multiply greatly in numbers, remain stationary three or four days, and then disappear. Their average duration therefore is 6 or 7 days. As a rule, they have begun to disappear when the integumental exanthem begins to pale. This affection does not seem to annoy the children. No ulceration of the spots was ever noticed. Conclusions as regards the prognosis could not be drawn from the number of spots present; in very slight as well as in severe cases numerous spots were indiscriminately present.—*Wiener Med. Cresse, 1898, xxxix., 806.*

Uric Acid Calculi Wedged in the Posterior Portion of the Urethra.—Dr. E. TAUFFER reports the case a 17-year-old boy who was brought to his clinic complaining of a continuous dripping of urine from the bladder. The penis and scrotum showed the signs of an artificial dermatitis; the meatus urinarius was somewhat eroded from being constantly wet. A urethritis was not present. At the age of 5 years the patient was said to have had scarlatina. The present affection dates a year ago, when the urine began to flow "thick"; incontinence of urine, however, had only been present for six months. Absolute incontinence had been present for two months, and about four weeks ago some sand had been voided occasionally with the urine. The latter was turbid, of an acid reaction, and contained a medium amount of albumen. A sound, No. 24 (Charrière), was arrested anterior to the bulb, its extremity touched a sharply angular, scratching body, and may be pushed slightly further on, where it again becomes arrested. As the introduction of the sound gave much pain, Tauffer undertook to palpate by way of the rectum, and demonstrated that a number of a calculi were impacted in the pars membranacea and the pars prostatica; these could be removed either by a jet of water (Janat) or by a sound, and maintained the continuous incontinence through

irritation of the neck of the bladder. The capacity of the bladder was hardly 50-100 grams, on account of the irritability of the wall of the bladder a cystoscopic examination could not be undertaken.

On the Use of Ichthyol in Eye Diseases.—EBERSON says that in various affections of the eye he prefers the ichthyol treatment to any other; it saves unnecessary pain to the patient, does not interfere with his vocation, and is well borne. So that this treatment is more acceptable to the doctor and the patient, besides being more humane than the nasal applications of nitrate of silver, copper, iodine, etc. Eberson was the first to recommend ichthyol in the treatment of trachoma. For this disease he employs a 50 per cent. watery solution with the addition of a very small quantity of glycerin, which preserves the concentration of the solution and permits its better adherence to the conjunctiva when painted on.

An experience with this remedy, extending over two years, in the various affections of the eye leads him to the following conclusions:

1. Ichthyol is the best remedy for the cure of trachoma, as it markedly shortens the course of the disease, and effects an uncomplicated cure.
2. This treatment is to be warmly recommended, particularly in children.
3. Ichthyol brings about a cure of conjunctival catarrhs in a very short time without complications of the cornea.
4. Ichthyol is an important remedy in dissipating corneal opacities.—*Aerytl. Rundschau*, 1898, viii., 307.

ABSTRACTS

A CASE OF CONGENITAL TRACHEAL FISTULA.

Dr. A. DWORETZKY (*Zeitschrift für praktische Aerzte*, 1898, vii., 826) reports the following case, on account of its extreme rarity and the few cases recorded in literature:

Indrik K., 14 years of age; parents, sisters, and brothers of perfectly normal build, and healthy. The patient has also been perfectly healthy up to the present time, but is now suffering with an acute bronchitis. On examining the thorax, a portion of skin in the jugulum, pathologically changed, attracts the attention. About 1 cm. above the manubrium sterni, in the median line of the throat, a small area of skin is present, which is not of a smooth and normal color like the surrounding skin, but somewhat paler, shrunken, and presenting the appearance of cicatricial tissue. This area of skin is about the size of a penny. In its centre we observed a minute opening, which is bridged over by a tender transparent membrane. On palpating the neck anteriorly, the finger came in contact with a thickened portion, in the form of a string, which runs subcutaneously from the neighborhood of the incisura thyreoidea, thin at its origin and gradually becoming thicker, along the median line to the jugulum. When pressure is exerted on the lowest portion of the string, the very thin membrane over the defective portion burst, and an extremely viscid, semi-solid, transparent, slimy mass exuded, which represented nearly a complete cast of the fistulous tract. The external opening of the fistula is about 4 mm. long and $1\frac{1}{2}$ mm. wide, and represents a cleft with two lips. The inner wall of the canal, which is only covered by skin anteriorly, is lined with a dark-red, velvety mucous membrane, which secretes this viscid mucus. An examination with the sound is quite painful, on account of the great tenderness of the lining mucous membrane. The straight sound also does not pass much further into the opening of the canal than a few centimeters, as the sternum forms an obtuse angle, open in front, with the anterior portion of the throat. When the patient's head is bent backward, the sound does not pass to the blind end of the fistula.

The history of the case reveals that this abnormality is congenital. During the first year of life it was only slightly observed. Later, however, and then regularly, the accumulated secretion flowed out periodically every few weeks; there are no other affections present.

We are, therefore, confronted with a case of congenital tracheal fistula, "so-called for the present," as Professor Albert expressed himself. The name "tracheal fistula" has, indeed, been badly chosen, and is altogether wrong, for this developmental anomaly has no connection with the trachea, except that it is in relation with it in a topographical way, being situated in the skin over the trachea.

How may we explain the occurrence of this anomaly? Of the four bronchial or visceral arches which laterally border on the pharyngeal

cavity, at the end of the first month of fetal life, but which are open in front, the first visceral arch forms the face and its bones by the growing together of its two halves. The pair of plates of the second and third visceral arch yield the hyoid bone, its horns, and the styloid process, together with the stylohyoid ligament. The fourth visceral arch finally affords the material from which the soft parts of the neck are formed. If, for any reason, anything prevents adhesion of that portion of both plates of the fourth visceral arch from which the skin of the neck is formed, and the latter is unable to meet in the median line, a tracheal fistula will, according to Luschka, be formed.

As regards the treatment of tracheal fistula, we may either attempt to cause an obliteration of the canal by injecting iodine, and thus close the fistula, or what is less troublesome and more effective, we may extirpate the whole canal to its blind extremity. As Dworetzky was unable to gain access to the literature on the matter, he is unable to say what efforts in this direction have accomplished.

A CASE OF ACUTE DIABETES MELLITUS.

BOHM (*Münchener Medicinische Wochenschrift*, 1898, *xliv.*, 1150). A student, 17 years of age, in the school for sub-officers, reported himself January 13, 1898, as being for some time ill and weak; at times he also was affected with headache and vertigo; he also complained of increased urination and great thirst; all these symptoms having only existed during his leave of absence for the Christmas holidays. According to the history of the case, and also from the monthly records of the medical examination, it was seen that the patient had formerly been perfectly healthy; his mother was still alive, and, together with two brothers, was quite healthy; his father died at the age of 43 years from dropsy, following cancer of the liver.

Present condition: The young man, though sufficiently developed, seems to have been poorly fed; his face is pale, and his eyes are heavy. The skin is dry and inelastic; the mucous membranes pale. The size of the heart is normal, heart sounds are strong and clear all over the valves; percussion reveals no disease of the lungs; on the left side, below and behind, numerous rhonci, as well as small crepitations are heard; the tongue is dry, somewhat coated; the appetite gone; thirst excessive. Pulse 78, small and soft. Temperature, 38.9°; amount of urine 5,500 cm. in twenty-four hours; the urine is remarkably pale, acid, specific gravity 1030, contains no albumin, but 4.9 per cent. of sugar. The proper diet was ordered, and a Priesnitz pack applied to chest.

January 14th.—Temperature, 38°; pulse; 96; polyuria and polydipsia still continue; bronchitis remains unchanged; on the left side, behind, below the angle of the scapula, is an area about the size of the palm, over which a pleuritic friction sound is heard.

January 15th.—Amount of urine during the day 4,000 cm., specific gravity, 1035; color, light; 5.8 per cent. of sugar. Condition of the lungs

unchanged. Temperature, 39.5°; pulse, 120, small. Wine stimulants were ordered.

January 16th.—Marked improvement; temperature has fallen to 38°, the pulse 84, though still small and somewhat tense; is much better than on the previous day; the pleuritic friction sound, which was present on the left side, behind and below the angle of the scapula, had disappeared; the bronchitic symptoms are improving; vesicular breathing is heard all over the lung. The amount of urine is 4,000 cm.; specific gravity, 1025; sugar, 4 per cent.; the tongue is heavily coated and fissured; appetite has somewhat increased.

During the night of January 16th and 17th, diabetic coma suddenly made its appearance; the patient was restless, tried to leave his bed continuously; the mind clouded, delirium constantly present. In spite of the hypodermic injections of camphor and ether, counter-irritation to the skin, etc., deep stupor came on; breathing became voluminous and noisy, greatly increased, 60 in the minute; the heart weakened, and did not respond to stimulation. The urine is passed involuntarily. Temperature, 35.6°; pulse, 120, thready. The comatose condition last twenty-four hours, and ends in death.

Autopsy.—Moderately emaciated male body, with only poorly developed muscular system, and nearly total absence of fat. The dura mater is firmly adherent to the vault of the skull, and moderately injected on its outer surface, in the posterior segment of the longitudinal sinus. The pia is much clouded at the convexity of the cerebral hemispheres. Edema of the brain, hydrocephalus internus acquisitus is present. Hypertrophy and dilatation of the heart, bronchitis sinistra also. Subacute parenchymatous and interstitial nephritis (large white kidney) was found. The pancreas is atrophied (weighing 36 grams, instead of 80 to 100).

The subacute nephritis present proved that the affection was an old one, although not of many months' duration. A greatly increased ingestion of food must have placed the patient in position to keep up his strength, so that he was able to continue his studies until four days before death, as was shown by the record of monthly examinations, where an increase in weight was always recorded.

The death of the father from cancer of the liver may be etiologically considered as regards heredity. At all events, the presence of atrophy of the pancreas, which is frequently responsible for diabetes, was markedly shown in the organ, which was diminished in size more than one-half.

THE RESULTS OF ARTIFICIAL FEEDING OF INFANTS SUFFERING FROM GASTRO-INTESTINAL DISORDERS AT THE POLYCLINIC.

K. GREGOR (*Deutsche medicinische Wochenschrift*, 1898, xxiv., 207) publishes the results obtained at the polyclinic with feeding by malted soups, which he believes to be the true test for a new method of nutrition.

Experiments conducted with 74 infants justify the recommendation of this preparation. The mothers usually obtained the malted soup at the Policlinic. The children themselves were examined every second day. The hygienic conditions under which the latter lived, were the most unfavorable possible. The result, notwithstanding, was good, and Gregor arrives at the following conclusions:

1. In all cases, where a child, at least three months old, is suffering from a chronic gastrointestinal disease, and for which no wet nurse can be procured, we have a strict indication to try feeding by means of malted soup for one or more months.

2. In younger and very weakly infants, an attempted nourishment, with this soup properly diluted, is also justifiable, under a careful medical supervision.

3. In children of the ages of 9 months to 1 year, who present the symptoms of a severe rhachitis, and are very backward in their bodily development, feeding with malted soup for some time, with the addition of proper vegetable food, as groats, green vegetables, etc., favorably influences a rapid cure of the rhachitis.

4. In infants, artificially fed, who, though free from gastro-intestinal troubles, do not attain the bodily weight of a normally breast-fed child, feeding with malted soup will at least give as good results as any other artificial food.

5. Seemingly healthy, as also weakly children, or those who are slightly dyspeptic, may be successfully weaned by combining their natural food, as long as milk is still secreted, with one or two meals of malted soup, which later on may take the place of the breast milk altogether for some time.

ON THE INFLUENCE EXERTED BY MENSTRUATION ON LACTATION.

B. BENDIX (*Deutsche medicinische Wochenschrift*, 1898, xxiv., 472), in a communication to the 70 Naturforscherversammlung, in Düsseldorf, comes to the following conclusions:

Many women, while nursing, are regular in their menstruation (about 60% according to the number observed). The beginning and regular recurrence of menstruation only rarely proved a cause for discontinuing the nursing process. Naturally, those cases come to our notice, as important, where menstruation returns a few weeks, or one to two months after childbirth. Quantitative mixtures of the milk could be demonstrated with extreme infrequency. As regards the quality, changes were only present affecting the fat. With this, it should be emphasized, that slight changes in the composition of the constituents of the milk do not affect the infant at all, especially when we consider that the milk, in itself even shows variations in its daily constituents. In only a very small number of cases could an influence on the health and stool of the child be determined from the occurrence of the menses. The answer to the ques-

tion, what shall we do if a mother or wet-nurse has her periods while nursing the child? is therefore never to remove the child from the breast on account of the fact alone that menstruation has returned. Even, if notable changes should present themselves during the days of menstruation (diminution in quantity, watery conditions, etc.), these will pass away again, and will not injure the child. If the child does not thrive, the scales will have to be brought into requisition. When a nurse is engaged, it is important to observe that six to nine weeks have passed since her confinement, that she has therefore already passed the time, in which as a rule, menstruation returns for the first time. If this has occurred, without a permanent diminution in the amount of milk, we have no ground, other things being equal, even though menstruation is present, to refuse the wet-nurse. That children, who are nourished at the breast, will become rhachitic, from the presence of menstruation in the mother or wet-nurse (as Vierordt claims), has not been proved.

POISONING BY BROMOFORM.

MULLER (*Münchener medicinische Wochenschrift*, 1898, *xlvi.*, 1211). A boy, about two years of age, when unnoticed, drank from a bottle containing bromoform, and swallowed about 6 grams of the medicine. This occurred in the afternoon of February 27th, at one o'clock. In a few minutes a drunken condition resulted. On the administration of luke-warm water and irritation of the pharynx, vomiting was induced. The child then fell into a deep sleep, was interrupted occasionally by suddenly occurring convulsions, involving the whole body, accompanied by cessation of respiration and pallor of the face. The physician, who had been notified by telephone, ordered large quantities of milk to be given the child, and arrived himself at 3½ P. M. He found the child with a low and hardly perceptible respiration, with closed eyes and a bluish-white face. The pulse was bounding; the hands cool; the pupils very contracted and immovable; the muscular system very much relaxed. When the child was lifted out of its bed, a convulsion like the foregoing came on, which led to the fear of immediate death. It passed off, however, leaving behind a condition of lock-jaw, which persisted for some time. By the aid of an esophageal sound, which was introduced with great difficulty, about 1½ litre of luke-warm water was introduced into the stomach, and again removed. The returning water was mixed with a few remnants of food, and had a slight odor of bromoform. While the sound was being removed another convulsion occurred, which was accompanied by a cessation of respiration and of the heart's action. Artificial breathing was at once instituted, and continued for about three-quarters of an hour. It was useless, however, and death resulted at about four o'clock.

The autopsy, which was held March 1st, disclosed the following: The pupils are equal in size, and of medium dilatation. The stomach, which only presented a few ecchymotic spots, but no loss of epithelium of the mucous membrane; contained remnants of food, which had a slight odor of bromoform. The duodenum and the upper half of the small intestine

were filled with contents which had a strong odor of bromoform; the mucous membrane was injected, of a rosy color; the solitary glands and Peyer's patches of the mucous membrane were distinctly swollen. The external part of the upper portion of the small intestine was of a rosy color; somewhat lower down the redness of the intestine disappeared, its contents were more like feces here; the odor of bromoform was lost, and the mucous membrane was pale. The liver, on the whole, is of normal size, its surface of a bluish-red color; a few extravasations of blood are found under its covering on the left lobe. Section also presents a shining, bluish-red color, and some thin, dark, lake-colored blood flows out copiously; the tissue markings are lost. The kidneys are large, brownish-red, and have a bluish tint, they are much engorged. The liquefied condition of the blood is noticeable all over; only in the right heart do we find a few small clots. The pericardium is empty; the left ventricle contains a small quantity of dark, liquefied blood; the left auricle and the right ventricle are perfectly empty; the right auricle contains a few dark-red clots. The larynx is empty; the mucous membrane of the epiglottis only is reddened; the trachea contains some grayish-red mucus; the mucous membrane is injected toward its lower end, more so below the division of the two bronchi; the tongue is pale; the left lung presents a few bloody extravasations below the pleura, on its lower lobe; its surface is of a dark, bluish-red; on section, of a dark, cherry-red color; the bronchi copiously exude, on pressure, a whitish foam; the amount of blood present in the upper lobe is small, that in the lower lobe is somewhat larger. The amount of blood present is, nevertheless, too small to enable one to catch a sufficient amount for further examination. The bronchi contain much whitish mucus, their mucous membrane is distinctly injected. The right lung, on the whole, presents the same conditions; the lower lobe presents on its surface a few bloody extravasations of the size of a lentil; the upper lobe is nearly devoid of blood. The veins of the dura mater contain a large amount of liquefied, dark blood; the vessels of the pia are quite remarkable, and rarely found in such a marked manner with blood; they form veritable tumors. The substance of the brain also presents many punctate extravasations of blood, it is filled with serum and soggy. The chemical examination of portions of the body revealed that the stomach and intestines, together with their contents, contained 1.65 gram bromoform; that bromoform was undoubtedly also present in the blood, portions of the heart, lungs, liver, spleen, kidneys and brain, but not in such appreciable quantities. If we take into consideration that only small portions of these organs were taken away and examined, we can well surmise that bromoform was present in large quantities in the body.

Müller reports the autopsy findings so minutely, for the reason that he has not found the same recorded in literature in poisoning by bromoform. The most important points were: the liquefaction of the blood, the dark-red color, and the great injection of the vessels of the brain and its membranes; the irritation of the mucous membrane of the small intestine, as far as the bromoform had reached it, is probably of less importance.

ATHETOSIS AND TÆNIA SAGINATA.

RUDEL (*Deutsche medic. Wochenschr.*, 1898, xxiv., 479). A girl, 13 years of age, from a well-to-do family, having no hereditary taint, presented a very pale color of the face, with a scrofulous habit, complained of lassitude, a tired feeling, anorexia, and disinclination for work since several months; during the last few weeks jactitations accompanied by spasms made their appearance.

The patient, up to the present time, had never suffered from these symptoms. The spasms and jactitations made their appearance in the extremities, especially in the hands and feet; unilateral, either on the right or the left side, appeared at intervals of several days and were of short duration. At first the fingers were convulsively spread apart and extended, as also the toes, at the same time there were present jactitations of the leg and arm muscles, without any loss of consciousness. These attacks, which bore distinctly the characteristics of the movements of athetosis, only occurred during the day.

An invigorating diet and treatment did not improve the patient. Castor oil was then ordered; the movement contained a number of tænia saginata. The latter was then passed altogether after the exhibition of *felix mas*, after which the patient immediately improved and all symptoms disappeared and have not returned after three months of observation.

The infection could only have occurred a year previously when the girl was on a visit to a relation (a manufacturer of bolognies) where a great deal of raw meat was eaten. This case proves that reflex spasms may very well occur in helminthiasis.



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ORIGINAL ARTICLES

ENLARGEMENT OF THE LIVER AND SPLEEN IN INFANCY.—REPORT OF CASES AND DIS- CUSSION OF ETIOLOGY.

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New York City.

CASE I. *History*.—Weiss, 18 months old, boy, second child of parents, who are healthy and show no signs of syphilis. Case first seen January 8th, 1898. Child well according to parents' account up to three and a half weeks before death. He had eaten and drunk always with appetite. Perhaps nearly every day he had taken a few sips of beer with the family at meals, and twice a week had also tasted cognac or schnapps. Two and a half weeks ago he became fretful, dyspeptic, and markedly jaundiced. Castor oil did no good; dyspepsia increased.

Examination showed a plump, intelligent-looking, well-grown boy. Icterus extreme from head to toe. Somnolent, occasionally fretful. Took a penny from the doctor and played with it languidly, without being frightened or apparently pained by the handling. Heart and lungs normal, only displaced by the enlarged liver. Kidneys secreted a non-albuminous urine, highly charged with bile; specific gravity, 1022, neutral, no casts; bile-stained epithelium and an immense uratic deposit. No leucin nor tyrosin found. Abdomen somewhat swelled, no fluid. Spleen not made out. Liver

much enlarged (down to the navel), smooth, sharp edges, not tender; right lobe showing greater enlargement. Notch quite easily felt. Gall-bladder not felt. Temperature never elevated at times of examination (January 8th and 10th). Pulse, 90-120. Respiration not notably changed. Fresh specimen of blood showed red-cells normal, and whites little, if any, increased. All other signs negative. Child was put on potassium iodide and calomel, with a milk diet. January 11th, father came to say the boy was worse, had been crying and restless all night, and that a hospital must be found. Baby

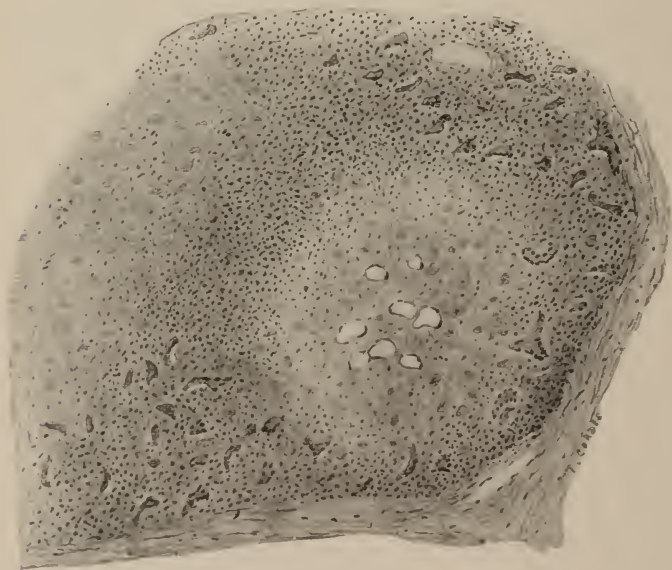


FIG. 1.

died in the Marquand cottage at Bellevue next day; same symptoms much exaggerated.

Post Mortem.—Size and shape of liver exactly as described above. Slight mottling, like fatty change; enlargement symmetrical. Surface smooth. No obstruction of the ducts anywhere to be found. Very little bile in the gall-bladder. Hepatic tissue quite firm; deeply tinged with bile. The spleen was small and soft, not over two ounces in weight.

Microscopic Examination.—Liver (Fig. 1) shows increase in the number of round cells in the periphery of the lobules,

also quite a marked increase in the number of bile-ducts. The periphery of the lobules shows apparently a beginning degeneration of the liver-cells, which can fairly be distinguished from the *post mortem* changes apparent elsewhere. The diagnosis of subacute interstitial hepatitis was concurred in by Dr. John S. Thacher, who kindly examined the sections with me. With the alcoholic history, and the failure of potassium iodide to work the remotest benefit, there seems excellent ground for the diagnosis, alcoholic cirrhosis.

CASE II. Y.—G.—, 2½ years old, female. A congenital idiot, with flattened nose and oblique eyes,—the so-

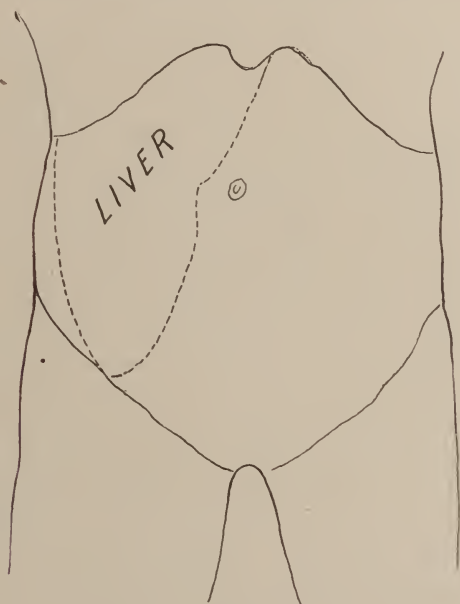


FIG. II.

called Mongol type. In development about equal to a normal child of ten months. First seen March 16th, 1899.

Father 28 years old, mother 36. Both foreign-born Hebrews. No history nor signs of syphilis. Mother has one other child, a little girl of six, healthy. No miscarriages.

Patient said to have been always sickly. An operation at Mt. Sinai Hospital last summer was probably, as described, lumbar puncture for hydrocephalus. Child had never been weaned, but besides mother's milk ate roll and "farina." For

two days past had been feverish, and unusually fretful, with loss of appetite and with irregular green stools,—probably an aggravation of conditions present long previous.

Examination was as follows: Color, pasty white; lips, ears, and ends of fingers bluish. Dyspnœa marked. No icterus, ascites, nor œdema. Head hydrocephalic, measuring $17\frac{1}{2}$ inches around. There were three or four teeth, and a scanty growth of black hair. The large fontanelle was an inch square, sunken, and filled in with elastic cartilage. Lymph-glands negative. Hands were like claws, and finger ends badly clubbed. Arms and legs were in continuous “athetoid” motion, and the child cried feebly when disturbed.

There was a little fever. Pulse was below 100. Breathing was labored, but not quick. Little or no cough was noticed. Pharynx was clean. Right lung was over-resonant on percussion; auscultation showed greatly exaggerated breath-sounds. Entire lower half of left lung was solid, with bronchial breathing and bronchophony. Cardiac dullness was enlarged, and entire area displaced to the left. There was no murmur at times of examination. The spleen could not be made out. The liver was enormous on the right side, extending well into the iliac fossa. Surface was smooth, edge sharp, consistency firm. The hepatic notch was easily palpable just to the right of the navel (see Fig. II.). The mother failed to save any urine before the child's death, but there was no special evidence of renal deficiency. The blood showed the changes of pernicious anemia, and will be described fully below.

The course of the case was rapidly fatal. Death occurred seven days later, March 23d. Strong pressure was made for an autopsy, but the parents were obdurate. By abdominal palpation of the relaxed cadaver, the lower edge of the liver was found well down in the pelvis, but the spleen was still entirely out of reach. It was unquestionably small. The bladder was slightly distended. There were still no ascites, œdema nor icterus.

Blood.—Owing to the feeble heart and marked cyanosis, it was believed that a count of the reds and whites in the peripheral capillaries would be misleading, and for lack of time it was unfortunately postponed until too late. Dried spreads, stained with the triple stain, showed the following :

Whites: A marked leucocytosis,—nearly 2,000 cells on a thinly spread cover-glass half an inch square. Differential count of 920 whites showed:

Polymorphonuclears.....	80	per cent.
Large lymphocytes.....	11	“
Small “.....	9	“
Myelocytes.....	$\frac{2}{3}$	“
Eosinophils.....	0	“

Reds: A majority of the red cells were abnormal in form: poikilocytes, microcytes, macrocytes, necrobiosis, and erratic staining very common. Over 200 nucleated reds were counted on a cover-glass of the size mentioned. In 100 there were counted:

Microblasts.....	3
Normoblasts.....	72
Megaloblasts.....	25

The nuclei were of all sizes and types: karyokinesis, absorption, extrusion and rosette forms were noted (See Fig. III.—explanations under each cut).

The diagnosis will, of course, remain in a measure conjectural. I suggest the following: Chronic phthisis, cardiac dilatation, congested and amyloid liver (amyloid following tuberculosis of the lung), and secondary anemia of a pernicious type.

The anemias of infancy are still so ill understood that this case, in spite of its fragmentary character, seems worthy of record. The blood is in most regards that of a progressive pernicious anemia.

CASE III. S.—R.—, 1½ years old, born in New York. Parents, Russian Hebrews.

Family History.—Father said to be healthy, mother never ill with anything worse than a quinsy last winter. She is 25 years old, and has had four pregnancies. The first miscarried at the fourth month. The second child was born at term, but lived only two weeks. The third was always healthy, and is now a well-grown boy of four, with no signs of syphilis. The fourth was the present case.

This child was brought on October 20th, 1898, with a marked jaundice, some fever, and a general malaise. No



NORMOBLAST
(with dividing nucleus).



NORMOBLAST.



MEGALOBLAST.



OLD MEGALOBLAST.



NORMOBLASTS.
(Atypical nuclei in various stages of degeneration)



MICROBLASTS.



"TYPICAL" MEGALOBLASTS.



OLD MEGALOBLAST
(Nucleus absorbing).



DISTORTED NORMOBLAST
(Nucleus nearly
absorbed).



Old.



Very Old.

MEGALOBLASTS.



MEGALOBLAST.



"TYPICAL" MEGALOBLAST.



MEGALOBLASTS.
(Degenerating Nucleus.)

FIG. III.

lymph follicles were palpable, teeth were excellent, hair and brows good; coryza was entirely absent. No history of alcohol or malaria. There was so little change in the liver and spleen that the icterus was thought to be catarrhal, and a mild purge was ordered. On November 4th, the jaundice had been replaced by a simple pallor; the child had completely recovered his spirits; physical examination of the chest was negative; but the right lobe of the liver, though smooth and painless, was now immensely enlarged, extending an inch below the umbilicus, and the spleen was three-quarters of an inch below the ribs, and proportionally broad.

Urine was straw-colored; specific gravity, 1015; no albumin, no sugar.—Calomel and blue ointment were prescribed.

November 7th. Baby still fretful and pallid. Tumor about the same size. Mother says his belly is tender, and that he is irregularly feverish. Cod liver oil was written for, and the mercurial ointment continued.

November 15th. Liver somewhat, spleen greatly diminished; child evidently fatter; weight 23 pounds. Same prescription renewed.

November 21st. Liver greatly reduced. Spleen not palpable at all. Child much stronger; weight, 23½ pounds.

December 3d. Still improving; weight 24¾ pounds. Medicine stopped.

February 24th, 1899. Child a perfect picture of health. Lower edge of liver could be felt half an inch below ribs; spleen still out of reach. Red blood cells about normal in number, and staining well. A few have pale centres; a few are overlarge and distorted. Not a single nucleated red could be found in a systematic search of two spreads. Leucocytes not notably increased; polymorphonuclear, 48 per cent.; small lymphocytes, 13 per cent.; large lymphocytes, 38 per cent.; eosinophils, 2/5 per cent. No myelocytes.

March 10th, 1899. Child weighed 27 pounds, and has continued perfectly well ever since.

In this case the extraordinary improvement on mercurial ointment offers fair clinical evidence of the specific character of the disease. There was no suggestion of syphilis in the history, except the unfortunate course of the mother's first two pregnancies.—This is, of course, only a clinical diagnosis. None such is often beyond cavil. But if it be alleged that the so-

called "alterative" benefit of mercury might have been expected in any case, I reply that when the other facts of the case are duly weighed, such astonishing speed of recovery in a non-specific affection would be, at least, unusual.

CASE IV. R.—K.—, female, 2½ years old, parentage as above. First seen, October 27th, 1898.

Family History.—Mother is about 27; she has no enlarged glands nor throat-scars, and no other signs of syphilis, except a saddle-shaped nose, and an unusual baldness. She is now preg-



FIG. IV.

nant with a second child (subsequently born at term), and says she never miscarried. Father is about the same age; is ill-fed and stupid, but denies syphilis, and shows no signs of it.

This child had always a good appetite and slept well up to a week or so ago. Then "got yellow," with white, hard, infrequent passages, loss of appetite, and "red" urine, which stained the napkins a deep yellow-brown, and first excited the mother's alarm. No fever nor thirst was noticed.

Examination.—Icterus well marked, specially on the whites of the eyes. Panniculus adiposus thick, cheeks and

lips quite red. Brows projecting and parietal bones prominent; no rosary nor enlarged epiphyses. No exostoses on the bones, no scars in throat; good teeth. Glands of neck, axilla and groin slightly but diffusely enlarged, hard, painless.

Temperature 99°; pulse regular; respiration normal; heart and lungs, negative. Lower belly, soft and compressible. Urine: specific gravity 1018; color red; positive bile reaction; no albumin, no sugar; a few crystals; no casts.

The right lobe of the liver hardly palpable, but the *left* greatly enlarged, smooth, firm, not painful; the edge is three inches below left costal margin (Fig. IV). Spleen very large, one and a half inches below ribs, and from before back remarkably broad. As to the blood, the leucocytes (unfortunately only a fresh spread was examined) were certainly not greatly increased; many polymorphonuclear cells were seen. The reds numbered above 3,000,000, were well shaped, and of fair size. No plasmodia were found.

Professor A. A. Smith kindly examined this case with me, and expressed the opinion that the very large spleen pointed rather to an infantile anemia than to syphilis.

Large inunctions of mercury were, however, prescribed, and within five days (November 1st) the symptoms had changed astonishingly for the better. Convalescence was prompt. The jaundice faded rapidly, and the tumor grew smaller. On February 15th, 1899, the left lobe of the liver was only a finger's breadth below the margin of the ribs, and the spleen was no longer to be found at all. The child has since continued absolutely well in every way.

The results of the treatment, coupled with the specific signs shown by the mother, leave only a measure of doubt that the trouble was inherited syphilis.

CASE V. H.—B.—, 2 years, parentage as above. First seen, November, 1898.

Family History.—Father, 44 years old; not seen, but reported to be healthy. Mother, 40; has had thirteen children. The oldest, 23 years old, said to be healthy; also the next five, —in all, six. Then a series of early deaths began: one child at seven days; next, seven days; next, one and a half years; next, three days; next, one and a half years again (this one of

"measles," the others, cause not known); then one at nine months; last, the present infant.

This child was never sick (barring diarrheal trouble), but slept well, and ate heartily. Never was given alcohol in any form. Never had an eruption. No history of malaria could be got. Present illness began with the declining fever and malaise attendant on a successful vaccination two weeks before patient's appearance at clinic. When almost well of the vaccination, he again sickened with jaundice and constipation. The

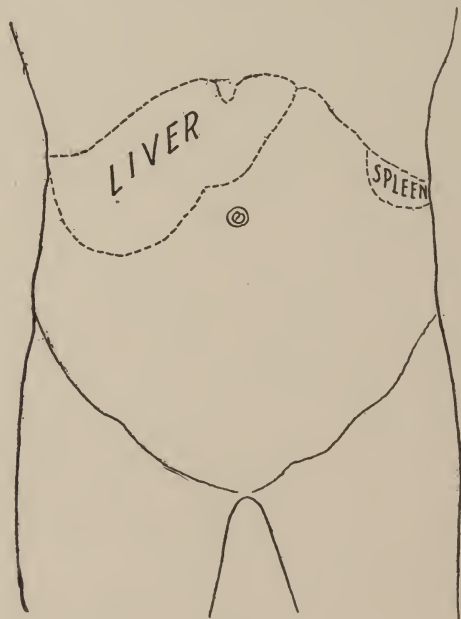


FIG. V.

stools remained yellowish, however, and his appetite was preserved.

Examination.—Child fat, good teeth, no signs of rickets. Icterus pronounced over entire body. Temperature, 99° , pulse slow, respiration easy. Heart and lungs normal. The liver extended from fifth rib to navel, smooth, resistant, not tender (Fig. V). Both lobes were involved. Spleen was large, smooth, half an inch below rib-edges, moving easily with respiration. Belly puffed and soft, percussion tympanitic everywhere. No glands enlarged in groin or axilla; one or two in

neck seemed larger than usual. Urine: color, yellow-brown; bile reaction, vivid; no albumin, no sugar.

Reasoning clinically, the diagnosis in this case was unquestionable. The father had evidently contracted syphilis after the birth of the sixth child. The patient began to improve at once on mercurial inunctions. After one renewal of her prescription, however, the mother disappeared, and was not found until two months later (February 25, 1899). She said she had employed a private physician meanwhile. Whatever the later treatment was, the baby had completely recovered. He had grown perceptibly; the spleen had completely disappeared, and the liver was palpable only a half inch below the lower border of the thorax.

DISCUSSION (CASES III., IV. AND V.).

Early congenital hepatic syphilis is not uncommon, and the anatomy has been well described in a number of excellent monographs. The cases are however only too often mere *post mortem* curiosities, and are beyond the scope of these comments.

The late inherited variety is, on the contrary, rather rare, and the literature is surprisingly scanty.

Since Barthélemy's valuable account in the *Archives Générales* for May and June, 1886 (32 cases, discussion and bibliography), the allusions are few. Fournier (*Syphilis Héréditaire Tardive*, 1896), is able to mention about 25 authenticated cases,—many of these from Barthélemy. Of the 25, seven were between two and ten years.

The following cases, reported in the literature since 1886, are briefly quoted:

1. Cardarelli, Giorn. Internaz. d. Sc. Med., 1896, p. 55.

Boy, 8 years. Parents syphilitic, Plump, pale, not jaundiced. Some enlarged lymph nodes in neck, axilla and groin. Liver covering epigastric region entirely. Spleen not palpable. Prompt recovery on proper treatment.

2. Pagliano, Marseille-Méd., 1893, xxx., 153.

Girl of 15 years; no history nor signs of syphilis. No icterus, no jaundice; good appetite. Large, smooth spleen, and a knotty liver, filling half the abdominal cavity, as low as the *crista ili*. She had slightly improved on anti-

syphilitic treatment at time of writing. The author did not consider the case indisputably specific.

3. Bristowe, Med. Press and Circular, 1886, 1, 405.

Boy of 15 years. No history of syphilis made out. Tumor of the epigastrium as large as a tangerine orange. Tumor had been first observed two months previously. Appetite fair; constant afternoon rise of temperature (101° and 102° F). No mention of splenic enlargement, icterus or ascites. For four months case remained in hospital, growing worse. A closer examination of the boy gave finally some reason to suspect specific trouble. On specific treatment the fever disappeared in five days, and the tumor in six weeks. Author considers the lesion a gumma of the liver.

4. Mackenzie (H. G. W.), Trans. Path. Soc., London, 1891-1892, xliii.

Boy, 15 years. History negative, no signs; emaciation, marked icterus. Extreme arteriosclerosis, organic cardiac disease. Urine normal, but heavily charged with bile. Improved temporarily on potassium iodide. *Post mortem* examination showed syphilitic disease, with gummata, and an extreme pericellular cirrhosis. Infection supposed to have been congenital.

5. Pitt (Newton), Brit. Med. J., 1891, II., 995.

Boy, 16 years. Clear history of hereditary syphilis. Ascites and enlarged liver. Latter was found, *post mortem*, to be marked with scars, and contained gummata and fibrous bands.

6. Chauffard, Jour. d. Mal. Cut. et Syph., 1891, III, 555.

Boy, born of a syphilitic mother, showing unquestionable cutaneous and mucous stigmata at birth. He improved temporarily on Van Swieten's fluid, and the cutaneous signs faded. No osseous lesions. At three months he was brought again with a liver below the umbilicus, uniformly tumefied, indurated and painful. Spleen enormous. Veins visible on right belly wall. Some ascites. Icterus not mentioned, apparently absent. Under large inunctions was completely cured, and in the next year more than doubled its weight.

7. Durante (D.), *Pediatria*, Napoli, 1897, reports at length, with tables, illustrations, and autopsy, a case of

syphilis of the liver, with icterus, in a boy of 30 months. Before death, the case had simulated completely a form of tuberculosis.

Hochsinger, *Wien. Med. Woch.*, 1896, xlv., 345, reports, in a valuable and well-reasoned paper, the general conclusions from 46 cases of congenital hepatic syphilis in nurslings; 34 of these were under six months, the others (12) between six and twelve months.

In respect of the *Pathological Anatomy*, Barthélemy's classification (l.c.) is still the best.

1st. *Congestion*. Enlargement of liver and spleen. Slight tenderness. Subicteric skin, gastro-intestinal derangement. Obstinate resistance to all remedies but the right one.

2nd. *Diffuse Interstitial Hepatitis*, with hypertrophy.

3rd. *Gumma*.

4th. *Amyloid Deposit*, usually complicating one or more of the above, and generally fatal.—Hochsinger's *post mortem* reports appear to make vasculitis the essential lesion.

The *Diagnosis* of the earlier and later forms will be practically based on the same signs, but the later types are much more difficult and obscure.

C. Mauriac, *Révue Gén. d. Clin. et d. Thérap.* 1888, 11., has shrewdly observed that the spleen in hepatic syphilis is almost always increased in size, whereas non-specific cirrhosis shows splenic enlargement only once in three or four cases. He also suggests that one large and one small lobe may speak for syphilis. Cases are reported, however, in which both of these points signally failed.

Fournier (l.c.) considers jaundice exceptional but not phenomenal. Hochsinger (l.c.) states that ascites and jaundice were both absent in all his cases, and claims that in the ages he has written of (under twelve months), jaundice has never been successfully proved. The latter statement is not strictly contradicted by my own cases, which are older, but is so by P. Meyer (a case with autopsy from Henoch's clinic, *Berlin. Klin. Woch.* 1886, xxiii., 255), and Baginsky (*Kinderkrankheiten*, 5. Aufl.). Durante's case (l.c.) falls (at 30 months), like my own, outside the one year limit. In respect to ascites, the case of Chauffard, just quoted, seems positively affirmative. Depasse, also (*Révue Mens. d. Mal. de l'Enfance*, 1886, iv.,

360), has reported the case of a boy 15 days old when first seen, with clear history and signs of syphilis in both parents. The child had a little coryza, two mucous patches, and an enormous liver extending into the iliac fossa. The spleen was large. Jaundice was absent, but ascites appeared after a time,



FIG. VI.

and was tapped more than once. Treatment effected a complete and permanent cure.

A careful review of all the cases on record shows, almost conclusively, that there is no clinical sign, nor complex of signs present in other forms of cirrhosis of the liver in children, which may not also be present, regularly, or exceptionally, in

late hereditary syphilis of the same organ. To keep this fact plainly in sight will save the practical worker from confusion and the dogmatist from much waste of ink and breath. Humiliating as the confession may be, the practical diagnostic resources at present known are (in the absence of specific stigmata elsewhere) the *history*, and (very much more relatively and uncertainly) the *results of treatment*. Both parents should be rigidly examined and the other children, if any, as well as the patient himself, systematically looked over from head to foot. If this fails to bring light (and it may), large inunctions of mercurial ointment should be made daily, and the blood-corpuscles and hemoglobin examined every three days. In a week or ten days, the specific cases will, as a rule, show extraordinary improvement.* Mercury will rarely do these patients any harm, and its persistent use will often do wonders in cases that seemed hopeless.

CASE VI. P.— K.—, 23 months. Brought to clinic February 21st, 1899. Parents foreign-born Hebrews. Father, 42; healthy and intelligent; denies syphilis. Mother, 40 years; married at 22; had ten children; first two still-born, at eighth and ninth months respectively. Surviving eight are all healthy, bright children; indeed, unusually so.

Personal history of this child rather vague. "Convulsions" once, a long while ago—only once. Three months ago, "inflammation of the lungs" was diagnosed by a Market street physician. Child was then ill more than twelve days. Five weeks ago, mother noticed icterus. Two weeks ago, eczema of chin appeared, and is still very bad, with infiltrated submaxillary lymph-follicles. Has not had chills nor fever, except during the pneumonia. No history of alcohol, except a little brandy while ill. Baby eats condensed milk, tea and "semmel," and has one or two normal yellow stools per day. Urine never stained the diaper. Child quite intelligent.

Status Præsens.—Plump and healthy looking, except for bright lemon-yellow color, which is marked on the entire body, and on the mucous membranes. Head well shaped, fontanelle closed, sixteen very good teeth; weight, 23½

* The majority of recent observations confirm this (Caspary, Robin, Schlesinger, Martin, Hillet). Lezius denies it. For full discussion see V. Limbeck's *Klinische Pathologie des Blutes*, 1896, p. 229.

pounds. No lymph glands can be found enlarged, except as stated, near the eczematous chin. Temperature not much elevated. Throat and tongue clean, lungs resonant, heart normal. Liver extends from fifth rib to a point a little under the navel; is smooth, firm, with a sharp margin. It is much larger on the right side, and the anterior surface is unusually convex. Spleen is easily palpable, and well below margin of ribs. Abdomen soft. Stools not seriously deranged.

Urine.—Specimen brought had a specific gravity of 1010. Color, deep yellow; slight bile reaction with HNO_3 . Urea, 1 per cent. No albumin, no sugar.

Blood.—Reds, 4,000,000. In a differential count of over 500 leucocytes, the percentages were as follows:

Polymorphonuclear.....	62	per cent.
Large lymphocytes	33	"
Small "	4	"
Eosinophilic.....	1 $\frac{1}{4}$	"
One Myelocyte was found.		

There were no nucleated reds, no plasmodia, no pigment. Red cells stained wells; a few had pale centres. Blue ointment was tentatively prescribed.

February 24th, 1899 (three days later). General condition and icterus same. Temperature, 99.8° F. Appetite still good. Reds, 4,330,000; whites, 2,320. Same prescription, with of course the usual local applications for the eczema.

March 10th, 1899, the child was seen again. The eczema was well, and the submaxillary nodes much smaller; the intense icterus was replaced by a subicteric yellowish hue. The local signs were stationary. Mercury continued.

March 30th the baby was again carefully examined. His jaundice had faded a little more; appetite was better, bowels regular; his mother said he was less fretful. The liver and spleen were found, however, very little smaller than the size first noticed (see photograph, Fig. VI, taken on the above date). The unsuspecting history and the inefficacy of the mercurial go far to exclude syphilis. Almost the only remaining probable diagnosis, considering all the features of the case, is enlargement of the liver and spleen due simply to subchronic catarrhal icterus.

THE DEVELOPMENTAL INFLUENCES OF PLAY.

By JAMES HERBERT MCKEE, M.D.,

Instructor in Children's Diseases, Philadelphia Polyclinic; Pediatric Surgeon to Out-Patient Department, St. Joseph's Hospital.

ONE cannot read that charmingly fresh account of Basedow's School, "Fred's Visit to Dessau,"¹ without being struck by the enthusiasm the children of the Philanthropinum evinced in the pursuit of their various games. And though Basedow, theorist as he was, and inexperienced as he was in the management of children, eventually failed in his educational undertaking; yet he demonstrated most beautifully that children could be instructed to a wonderful extent through the delightful agency of play.

But there is a philosophy underlying these beneficent influences of play, which even the modern kindergarten teacher does not always comprehend; and to this philosophic aspect of the question I invite your attention this evening.

Who that has watched a young animal play can doubt the influence of such activity upon the animal's physical condition. A pet bull-terrier of ours is one of the most inveterate players that I have ever known. In play he is simply tireless, and he has reached a state of muscular development which is seldom attained even in this powerful breed of dog. But in the case of the lower animal, development does not cease here, for the psycho-motor centres which dominate these educated muscular acts develop simultaneously with the muscles which perform these acts. Indeed, as we all know, our first accurate knowledge of these selfsame centres was obtained, when Fritsch and Hitzig located them in the brain cortex of the dog.

Nor is this all, for animals like children may be advanced through play to a higher intellectual plane. To state this thought in other language, the animal's intellectual centres, the sovereigns of the nervous system are educated in recreation.

Often have I seen a favorite pug-dog, frequently accounted a stupid animal, gravely seated upon a stool, while his mist-

¹ An excellent abstract may be found in "Quick's Educational Reformers."

tress carried a ball of cloth from one portion of a room to another, and finally hid the prized plaything somewhere about the apartment. Then the dog would jump down and proceed to hunt the ball. The animal's fondness for this game is unmistakable, and he will frequently bring this plaything to a member of the household, and asked to be played with as eloquently as words can ask. This single example will serve to illustrate the influence upon intelligence, for a dog left to himself would never indulge in any amusement so complicated as this modified hunt-the-handkerchief game.

Let us turn our attention to the healthy child at play. Who can fail to note the happy zest with which he enters into this spontaneous exercise of his muscles? And as one looks, one cannot help feeling that the authorities are in the right when they contend that play is better than gymnastics. Contrast those sparkling eyes and cheeks aglow, as the little fellow plays tag in the open air, with the lacklustre expression and half-hearted zeal with which he performs the calisthenic exercises of the school-room.

Let us assume, for the present, that in play we find the most rational method of exercising the child's muscles, and trust to prove this proposition later in the discussion.

The physiologist will inform us that the muscle is comparable to a machine, but that in activity it is much more economical, as more of its energy can be utilized in the form of work. Unlike the machine, the muscle is self-reparative, and, more than this, it actually gains in size with use, with consequent increase in its actual strength. Consistent training of the muscles achieves another result that is quite remarkable, for the trained muscle performs the same amount of work as the untrained muscle with a much less expenditure of energy.

But our study of the dog has shown us that these development results are not confined to the muscles; that the psychomotor and intellectual centres undergo a synchronous development. The same is true in the case of the child. The physiologist informs us that the development of a motor area in the cortex does not depend upon the size of the muscles directed, but rather upon the complexity, diversity, and degree of co-ordination of the movements which the muscles perform. In other words, the educated centre which directs the educated

act is better developed than the centre which controls gross and relatively inert masses of muscle.

Obviously, repetition of muscular acts will result in the development of association centres; and the basal co-ordination centres and motor cells of the cord will certainly be functionally improved by muscular exercise.

Professor Henderson, in his masterly articles upon the "Philosophy of Manual Training,"² lays stress upon the simultaneous development of muscle and brain which the intelligently directed muscular movement secures. Indeed, it is this full development of the individual for which the manual training system strives.

But does play secure such exercise of the child's muscles? The proposition remains unproved, and for such proof we must turn to the pedagogist and the psychologist.

To Basedow belongs the credit for demonstrating the didactic value of play.

The followers of Froebel learn how much stress was laid upon play by the founder of the kindergarten. Here is a single quotation from the last named authority: "I can convert childrens' activities, amusements, occupations, all that goes by the name of play into instruments for my purpose,"³ etc. Indeed, any one interested in the modern kindergarten system, knows how the children "learn in play to work."

These allusions will serve to show how the pedagogist regards these natural agencies in the teaching of young children.

The psychologist can answer our proposition positively and at length.

In the first place, the child's attention may be readily secured, and, indeed, completely engrossed by a game which is suited to his years. Now, the veriest tyro knows that when our attention is attracted by anything that we are in a position to learn something about that thing; while, when attention is diverted, our thoughts wander, as we say, we are less likely to acquire a knowledge of the matter in hand. In play, the only form of attention displayed in the infant and young child, viz.: passive attention is engaged. More than that,

² The "Philosophy of Manual Training." C. Hanford Henderson, *Appleton's Popular Science Monthly*, vol. liii, No. 1, 2, 3, 4, 5, and 6.

³ Quoted in "Quick's Educational Reformers."

every mother knows that play can engage her child's attention more continuously than any other agency.

In the second place, we are told that attention and affection go hand in hand. Psychologically, there are two kinds of affection (Titchener 4); that is, sensations affect us either pleasantly or unpleasantly. Play certainly affects the child in the former way; we have a pleasant affection. Now, while the affection, strictly speaking, is a mental process, it is accompanied by phenomena in other parts of the body which are known as the bodily signs of affection.

Titchener says :

1. "When we are pleased the pulse is strong; when we are displeased, weak.

2. "The same thing holds true of the breathing. If an experience is pleasant we breathe more deeply; if unpleasant, less deeply. In joy we breathe in great breaths; in sorrow our breathing is short and weak.

3. "When we are pleased the blood flows more freely into the little blood vessels which lie just beneath the skin; when we are displeased, it is withdrawn into the internal organs of the body. Hence we are really larger, we expand in pleasure, and shrink into ourselves during an unpleasant experience.

4. "When we are pleased, we are stronger muscularly, we can put forth more strength than when we are displeased. We feel stronger and are stronger when we are heartily and justly angry. (Pleasant anger). Grief bows us down, crushes us, leaves us physically weaker than we were."

All this must be regarded as important evidence in the proof of our proposition: A spontaneous play of the muscles; the child's interest engaged; an affection of so pleasant a character that the child experiences a sensation of happiness, has fun, as he would say; and then the little one is actually stronger temporarily, and is thus better prepared to exercise his muscles.

But as yet the psychologist has not advanced his most powerful argument; and that is that plays are genetic.

Quite recently Dr. Gulick,⁵ in a most able article, has

4 A "Primer of Psychology." Titchener-Macmillan Co., 1898.

5 Some "Psychical Aspects of Muscular Exercise." L. Gulick, M.D. *Appleton's Popular Science Monthly*, vol. lili, No. 6.

treated this later phase of the subject. We can wisely quote from this source:

"The divisions that I have made are—

1. "Babyhood, approximating from birth to three.
2. "Early childhood, three to seven.
3. "Childhood, seven to twelve.
4. "Early adolescence, twelve to seventeen.
5. "Later adolescence, seventeen to twenty-three."

"How do babies play? They love to rattle paper, to take hold of things, to muss paper up, to pick things up and drop them, watching the result; to roll a ball, to push and pull things about with their hands; they delight in playing with sand, and dirt, and stones, in toddling after the hens; they delight to splash water, and in many other such simple activities. . . .

"During early childhood—three to seven—children enjoy building with blocks. At first the buildings are simple and regular, the blocks stood up in rows more or less equi-distant. The idea of regularity appears to be definite, but little idea of symmetry is observed until the latter part of this period, and then I suspect that it is the copying of other children. Children enjoy swinging, are fond of climbing, will climb low trees, will climb banisters, experiment with jumping from chairs, with jumping from steps. All our children have gone through a stage of wishing to cut things. The attachment for dolls comes in the latter part of this period among girls. We started with the idea that until puberty boys' and girls' minds are just alike, except so far as they were trained differently by their parents. Wishing our children to have vigorous, robust bodies, we endeavored to have them live the kind of lives lived by boys, and gave them no dolls; but the instinct of the girl turned to the doll like the needle to the pole. There is nothing so fascinating to them as dolls. The doll life during this period is not complex.

Such simple plays as "patty-cake" come soon after three; "drop-the-handkerchief" later yet. The child is immensely inquisitive, and wishes to find things out. Its play is much influenced apparently by this feeling. I do not think that the destructive play of boys at this period is merely destructive; it is related to the acquisition of knowledge and construction of other things. Children are interested in but not sympathetic

with animals and bugs, by nature. They will play with flies, pulling the wings off to make them tame, and many other things, indicating a total lack of appreciation of the suffering of animals. Children before seven rarely play games spontaneously. They do so sometimes under the stimulus of adults and older children.

The same fact may be stated in regard to competition. The plays before seven are, almost exclusively, non-competitive. Comparing the plays of this period with those of babyhood, I would say that the muscular movements involved are more powerful, more sustained, but still of the same general character. Unless influenced by adults, there is but little fine work with the fingers and wrists, not very much of delicate co-ordination. The movements are the larger movements of the trunk, shoulders, and elbows. It is a time of great activity. There is but little sitting still or keeping still when awake." . . . "During what I have called later childhood—from seven to twelve—in girls we have the height of the doll plays, elaborate housekeeping arrangements. Two of our children are now in this stage. They have secured all the bits of broken dishes, bits of tin, and other things, that are used for housekeeping, and in old boxes, in imaginary house, or whatever is available, are going through with these elementary housekeeping arrangements. At about ten, the interest in dolls seems to wane, but, taking its place, is an interest in babies. It is a common thing to see girls at this age asking to borrow babies to wheel them round in baby-carriages, to play with them or swing them. Every one of our babies have been borrowed by children of about this age. Boys do not borrow babies; it is distinctly a feminine trait to play with babies. Boys want knives, to whittle, all sorts of plays, with strings, flying kites. The ball games are played, an elementary baseball game, swimming, and rowing. Boys delight in the use of tools during this period, and in building all sorts of things; making little streams and dams, paddle-wheels and boats, simple machinery of all kinds. Many games are now played — "duck-on-the-rock," "black man," "crokinole," "leap-frog,"—simple feats of all kinds, turning somersaults, rolling over backward, marbles, "mumble-the-peg," "prisoner's base," "puss in the corner," "tiddledy winks," "touch wood."

Girls play some of these games: "hunt the handkerchief," many games in which the circle is used, one individual running inside or outside, "hide and go seek."

"The games are almost exclusively individualistic and competitive, forming a strong contrast to the plays of early childhood. The distinction between girls and boys in the plays of this period is marked. Boys play games in which the competition is more intense; muscular co-ordination more accurate, and constructive work more definite and logical."

"During early adolescence—from twelve to seventeen—is preeminently the group game period; baseball, football, hare and hounds, hockey, lacrosse, basketball, all sorts of tournaments."

"This is a large group of plays. Two elements seem to predominate. 1. That the plays are predominantly team games, in which the individual is more or less sacrificed to the whole, in which there is obedience to a captain, in which there is co-operation among a number for a given end, in which the play has a programme and a plan. The second characteristic of the period, with reference to its place, seems to be all of savage outdoor life, life-hunting, fishing, stealing, hero-worship, adventure, love of animals, etc. This characterization obtains more with reference to boys than to girls. I have not studied the plays of girls for this period."

"During later adolescence—seventeen to twenty-three, there is a development of these same plays and games, but they are sufficiently different, I think, to warrant making a separate group of them. The plays are pushed to the limit of endurance and strength, as they are not during the early adolescent period. They correspond more to organized savage warfare; for instance college football. There is a depth and intensity about it that older people can hardly realize unless they themselves have been through it. It seems to be a real thing, and not merely a game. Wrestling, boxing and fencing have their chief attractions at this period. The whole nervous system and muscular apparatus having been fairly constructed during later childhood and early adolescence, is now tested and knitted together with vigor, and given endurance and staying power."

"Comparing now the three major periods—early childhood, later childhood, and adolescence.—it appears that the

plays of childhood are individualistic, non-competitive, and for the accomplishment and observation of objective results. The plays of later childhood are individualistic, competitive, involve muscular co-ordinations and sense judgments. The plays of adolescence are socialistic, demanding the heathen virtues of courage, endurance, self-control, bravery, loyalty, enthusiasm, and the savage occupations of hunting, fishing, swimming, rowing and sailing." . . .

"Different writers on psychology, particularly James, have advanced the idea that plays are genetic. We are familiar with the thought that the body, in reaching the adult stage must briefly rehearse the history of the race. The body starts from a single cell, and with greater or less faithfulness, travels the road to adult life that the race has traveled. I do not know any scheme of physical training that has been deliberately founded upon this system of genetic psychology. It appears to be not only true that the body rehearses the life of the race; it appears true that the mind must do so also, and that the plays of children are the rehearsal of the activities of the race in long forgotten ages—not necessarily the same activities, but activities involving the same bodily and mental qualities." . . .

The writer then goes on to state that the child experiences fun or happiness in his play because he is "living through and satisfying these elemental racial functions." . . .

The evidence brought forward in support of play as the best development agency in infancy and childhood, appears to me well-nigh incontrovertible. And if we accept it, it would appear equally that a rational system of securing muscular development, must take into account the orderly and progressive processes just detailed. And on the other hand it would appear equally apparent that radical interference with these "cosmic processes" might result in deficiencies of development, which no method or device of later life could adequately supply. For many years the nervous specialist has regarded precocity in young children as an abnormal condition, often associated with functional nervous disease, and seldom realizing its early promise. If we accept the views just advanced, how readily we can perceive that the precocious child has failed to live a portion of its life, and that the gifts presented by bounteous nature during that period may be forever lost to that individual.

Many of us have observed the promise of maternity, as the little girl fussed over and caressed her dolls. Is it not possible that the premature miss, who is hurried through the doll stage, and taught to think of dress, and parties, and beaux, shall fail eventually to develop the maternal spirit. It is certainly probable that the boy who does not learn to whittle and use tools when of a proper age, may remain clumsy in the use of mechanical appliances all his life.

It may appear to some that a great deal of matter has been advanced to prove a proposition whose truth no one will deny. In defence of this somewhat lengthy argument, it might be well to cite a few instances of parental ignorance:

A certain gentleman of education was prone to lay considerable stress upon the proprieties of life. He had a habit of calling his boys from their more active amusements, and of passing his fingers under their shirt collars. If he found that their necks and collars were moist with perspiration, he would peremptorily put a stop to further play.

A short time ago, I was treating a little girl of seven years who had a small focus of tuberculous disease in the apex of the right lung. When, after a few months treatment, she had gained some flesh and strength, I found that the mother was repressing the play spirit, which had returned with improving health, because the children of the neighborhood were not considered fit associates for her daughter. It was wonderful to note the change in that little one's condition when my intervention secured her the privilege of playing with her mates.

How often one hears a child addressed in this wise: "How can you play tennis out there in the hot sun? If you really want exercise come in and dust your room." Now, no doubt the child has reached an age when she may assist in house-keeping affairs, and advantageously so, but does that mother think for an instant that a perfunctory task, performed in a dust-laden atmosphere, can compare as a muscular exercise with the joyous and spontaneous play in the sunshine and fresh air.

Even when, far from retarding these childish pastimes, parents encourage their children to play, I doubt that there are many parents who realize the educational possibilities of the exercise which children love.

In treating of the developmental influences of play, one

would do imperfect justice to the subject in hand, were one to neglect the moral aspect of the question. In his introduction to "Evolution and Ethics,"⁶ Thomas Huxley uses the following beautiful simile. He speaks of a garden, which under the dint of cultivation, has become the habitat of rare exotics, and has been freed from weeds. He pictures this garden as deserted by the gardener, and left to the hand of Nature, and shows how the struggle for existence would commence there, how the cultivated appearance would cease to be, and how only those plants best fitted to live under the existing conditions would thrive where the garden had been.

The whole moral fabric of civilized communities is comparable to this garden, for guarded as it is by an elaborate system of laws, and by that powerful factor in society, public opinion, the forces of nature or the evolutionary processes are constantly antagonizing, and tending to destroy it. In Huxley's own words: "Let us understand once and for all, that the ethical progress of society depends, not on imitating the cosmic process, much less in running away from it, but in combating it."

Upon a superficial consideration of this thought, one might be lead to say; "You inform us that development may be furthered and perfected by following the cosmic process, and then you proceed to tell us through the voice of authority that the ethical process is opposed to the evolutionary process. How can you explain this paradox?"

Probably the best way to attempt an explanation, will be to select representative plays, and show how these activities through proper restraint or active opposition, may furnish us with material for the instillment of moral lessons:

Let us take the baby who loves to rumple and tear up paper. Under certain conditions he may be permitted to tear up old papers, leaves, etc. In doing these things he is developing toward perfect animality. But, if he exhibits such traits in the library, and attempts to tear up a book or a magazine, he may be removed from the environment, where this destructive tendency does harm, or else the article whose destruction is threatened, may be taken away from him. And if the exhibition of the tendency always meets with the same treatment, the baby will soon recognize that there are certain things which

⁶ "Evolution and Ethics, and Other Essays." D. Appleton & Co., 1899.

he can do, and others which he cannot. Thus a first lesson regarding self repression and property rights has been inculcated. My bull-terrier has an old shoe with which he loves to play, but he never essays to touch any other shoe, simply because he was taught that he must not when he was a puppy four months old.

In early childhood, the destructive tendency may be met with its opposite of constructiveness; thus the child may be taught to build with blocks, etc.

Young children are notably selfish in their play. The developmental influence of a particular game is not interfered with when we teach them to consider the feelings and rights of their little comrades. Again, young children are cruel in the treatment of animals, and, indeed, to those of their mates who exhibit marked peculiarities, or bodily deformities. They must be taught what physical suffering means, and they must learn that there is no suffering so hard to bear as the mental pain ignorantly inflicted in the latter instance. Later in the child life, and in adolescence, when competition becomes an important element of play, the boy must learn that he is not to bully his weaker comrade; rather that his own superior physical mould should make of him a natural champion and guardian of the weak.

These few and simple examples will serve to show that whilst play unrestricted may develop the fine animal man; yet in play, certain natural tendencies, dangerous in their nature, may be studied, faced, or actively combated, so that the noble, moral member of society man, may result as a crowning complement.

There is still another aspect of this question, which has only received a casual mention, viz.: the sociologic side. Let no parent think that he or she alone can satisfy the child's needs. Let it not be forgotten that the child is a member of a society, primitive though it be, in which he must play his part. The parent may act the superior part of a kindly mentor, influencing the choice of companions, encouraging good tendencies, and frowning upon the vicious. But let him sit as a wise and lenient judge. Let him think that as that little fellow plays his part among his companions, so he may play it as a future citizen.

EDITORIAL

CHILDREN AND ROENTGEN RAY DIAGNOSIS.

The value of the new method of diagnosis, based upon the discovery of the X-rays of Professor Roentgen, is now universally accepted. Few medical men would venture to gain-say the proposition that in many cases it furnishes the physician, hardly less than the surgeon, with information obtainable by no other means. With the growth of experience, moreover, it is constantly disclosing fresh facts and suggesting fields fraught with future possibilities. So far as the method applies to children it is evident that the particular conditions yield results and promises of results that cannot be obtained from adults; at any rate, in the present stage of evolution of the "black art" of skiagraphy. It is hardly necessary to allude to the purely objective nature of the process, a consideration of first importance in dealing with infants. A train of otherwise inexplicable symptoms may be accounted for by the discovery of an unsuspected coin lodged in the gullet of a baby. As a matter of pure diagnosis of a rare and more or less obscure pathological condition in older children, we may instance coxa vera, the existence of which can hardly be determined with any degree of certainty without the *ad demonstrandum* finding of the focus tube. Then there is a wide range of usefulness awaiting the method of dealing with various epiphyseal maladies. At the recent Edinburgh meeting of the British Medical Association, for instance, was shown a Roentgen ray photograph of the hand of a young person where some of the epiphyses were altogether and others partially destroyed as the result of frost-bite. Indeed, it would not be difficult to fill a volume with an account of the pathological conditions upon which the Roentgen methods have thrown new light. For various reasons, not yet perfectly

understood, better photographic results are often met with in children as regards the soft tissues. Thus, under proper conditions, a fairly perfect picture may be secured of the intestines, a region which in adults still resists the efforts of the Roentgen operator. Nevertheless, the fact that such a record is feasible in young subjects brings the photograph of the living human adult bowel within the reach of scientific investigation. Apart from such considerations, however, there can be no question that a full Roentgen ray installation is essential to every children's hospital, if only for the purpose of every-day clinical examination and diagnosis. In several institutions of the kind the work has hitherto been entrusted to a photographer or an electrician, with results that have been doubtless satisfactory so far as concerns the mere photographs. The excellence of a photographic record, however, may be stated broadly to be a matter of minor importance, for the surgeon can, as a rule, learn all that he wants from a roughly and rapidly executed photograph. Then, again, one should remember that the use of the fluorescent screen will often do away with the need of a permanent photographic record. On the other hand, for the intelligent handling of the screen and adjustment of the focus tube to varying relations of hard and soft tissues of the human body it seems obvious enough that a good knowledge of anatomy is requisite on the part of the operator. Hardly less desirable is a sound acquaintance with the ordinary facts of coarse pathological anatomy, a knowledge which will become more and more necessary as the Roentgen ray photography of the soft tissues becomes more perfect. It is evident that these two branches of special attainment are to be looked for in medical men only, so that if the foregoing predisposition be accepted, it follows that we must turn to that class for our Roentgen ray operators. The medical man can readily learn enough of photography and electricity to serve his purpose, whereas it would be hope-

less for the ordinary photographer or electrician to hope to master such highly technical subjects as human anatomy and pathology. Besides, the medical man is already trained for scientific observation and is therefore more likely than a less highly and specially qualified operator to arrive at general conclusions and to appreciate at their just value the enormous mass of clinical facts that are accumulating in this new sphere of professional labor. It is possible, though hardly probable, that some practical therapeutic value may one day be found for the focus-tube rays, which are by no means synonymous with the X-rays of Roentgen. So far as they have received any such limited application at present, as, for example, in the treatment of lupus or of hirsuties it has been conclusively shown that the results are not sufficiently within control to avoid dangerous complications, and further that they possess no distinct advantages over ordinary methods. As to the wider future of the Roentgen rays in medical work, there can be no doubt that before many years have elapsed great advances will be made in the simplification and availability of a process that at present must be regarded as not a little costly, complicated, and cumbersome.



SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting, March 14, 1899.

Dr. EDWIN E. GRAHAM in the Chair.

Dr. C. S. POTTS read a paper entitled, "**Case of Friedrich's Ataxia.**"—He spoke as follows: This little girl, until 5 years of age, was as other children. She has one sister, who is healthy. At the age of five she began to develop symptoms which have progressively increased to the condition which you see at present. I would call your attention to the following symptoms: In the first place, the gait is markedly incoördinate; this is increased when she shuts her eyes; marked nystagmus is seen when lateral movements of the eyes are made; there are also jerky movements of the head, and jerky choreiform movements of the arms (static ataxia), and clumsiness and difficulty in picking up small objects. She also has some tendency to talipes varus, one foot shows this more markedly than the other. There are no sensory symptoms whatever. There are no changes in the eye-ground, and her mental condition is much better than you would expect from the expression of the face. Her speech is defective, being hesitating and slurring. Our records say that she is 15 years of age, although she looks younger. She can read and write. The knee jerks are absent. She has a fair amount of strength in her limbs, and could walk well enough were it not for the incoördination. There are no eye symptoms except nystagmus.

Dr. J. P. CROZER GRIFFITH.—It is true that I was deeply interested in this subject about ten years ago, having had occasion to see several good instances of the disease. There were three cases under my care in one institution, two of them being brother and sister; and since that time I have come across a number of cases, making twelve or thirteen in all. The patient now exhibited presents quite typical symptoms. I would especially call attention to the expression of the face and the method of holding the head and body. The strange,

stupid expression which the child has seems to me one which all the cases assume, as far as my experience goes. A year ago I saw in the Children's Hospital of this city a child sent in with the diagnosis of chorea, this diagnosis having been made by a man well known to all of us, and whose ability is unquestioned. The child was brought before the ward class, where I saw it for the first time. I was about to demonstrate it as an instance of chorea, when I looked at the child more carefully. The mouth was kept open much of the time; there was a disposition to a forward and upward projection of the chin, with a little tilt to one side; there was a tendency to curvature of the spine, and the speech was slow and "ataxic," as is characteristic of Friedreich's ataxia. In fact I found that I had to do with a perfectly typical case of this disease. Yet the confounding Friedreich's ataxia with chorea has occurred repeatedly. The movements of the former are, however, not choreic, but choreiform. We really have to do with what has been called "static ataxia." This child, namely, does not seem able to keep the equilibrium of her limbs even in a state of rest.

With regard to the pathological anatomy, two of my cases came to autopsy, and in both were found the principal lesion of the disease, viz., postero-lateral sclerosis.

I would like to ask Dr. Potts what he thinks the best explanation for the difference of symptoms of this disease and of ataxic paraplegia. Among other symptoms may be mentioned the knee jerk is present in the latter affection, while in the other it is absent. I may say here that there have been cases described as Friedrich's ataxia in which the knee jerk was present, and which have been merely errors in diagnosis. Some of them may have been multiple sclerosis; others, perhaps, cerebellar ataxia. There appear, however, to be genuineness of Friedreich's ataxia, with the presentation of the knee jerk.

In the line of treatment there is really nothing to be done. A few years ago, at the time when the treatment of locomotor ataxia by suspension had become so popular, I tried the method in a case of Friedreich's ataxia, and continued it for several months, but without the slightest benefit.

Dr. C. S. POTTS: As to the absence of the knee jerk in Friedreich's ataxia and its presence in ataxic paraplegia, I

believe that the sclerosis of the posterior columns in ataxic paraplegia is situated higher up in the cord than in Friedreich's ataxia, and as a usual thing the lumbar region escapes. The obstruction of the sclerosis in Friedreich's ataxia, the situation of the posterior columns is similar to that found in locomotor ataxia. I think the posterior root-zones also escape in ataxic paraplegia, while they are involved in Friedreich's ataxia. The cases formerly classified as Friedreich's ataxia, where the knee jerks are present, are now classified under the name hereditary cerebellar ataxia, and to those cases which have come to autopsy the posterior columns have been found uninvolved.

Dr. T. S. WESTCOTT exhibited a home-made measure for sugar of milk, intended to weigh by dry measure the amounts of sugar to be used in various milk mixtures.

Dr. F. SAVARY PEARCE reported a case of traumatic neuritis with complete monoplegia of the right forearm; operation; improvement. The case was of a particularly well developed and healthy lad of robust ancestry.

On February 12, 1898, the boy's right arm was drawn into a pulley belt, and he sustained a simple fracture of the radius, ulna and humerus. There was much contusion and even crushing of all the soft parts. The arm was treated carefully on splints, and bony union was not delayed. The fingers and all of the right forearm muscles remained totally paralyzed, however, and sensation was absent in all cutaneous nerve distributions, from the crease of the elbow down.

When first seen, May 7, 1898, the above conditions obtained. There was also great quantitative and marked qualitative reduction of response to electrical stimuli in all muscles of the forearm. The upper arm movements were normal, the shoulder girdle muscles slightly wasted from disease. Electrical treatment and massage were vigorously applied. There was no apparent improvement at the end of the month. Operation was now resorted to, the musculo-spiral nerve being now exposed, and was found to be degenerated and compressed into less than half its normal size, but there was no callus pressure found. The ulnar nerve was also exposed, but was not compressed nor softened. The wounds healed readily.

The treatment described was continued faithfully during the entire summer of 1898. In July, sensation had returned somewhat, and the fingers could just be moved. Regeneration of nerve trunks was proven by electrical examination. At the end of one year regeneration was complete and the function fast recovering.

Dr. CHARLES W. LE FEVER reported "**A Case of Acute Dilatation of the Heart**, with especial reference to the use of Digitalis."

The child, a boy of five, had been the subject of acute dilatation of the heart following prolonged, severe illness from broncho-pneumonia and measles. The family history presented nothing of importance, except some instance of her-mophilia. The boy's personal history previous to the present illness was good. He was of rather fine lineaments, but well developed, and showed no clubbing of the fingers or other evidence of congenital heart affection. He had no history of tonsilitis, rheumatic pains or scarlatina, and had suffered from none of the acute infectious diseases of childhood except vari-cella, which was of mild degree. The present illness dated from 4 years of age when the patient began to have a dry cough, and frequent vomiting and pain over the upper part of the abdomen. Four months later he was taken with broncho-pneumonia, from which he was severely ill for five weeks; but little gain in weight or strength had taken place when at the end of seven weeks from the onset of the pneumonia he took measles from his brothers, and was sick about a week from this. Two months later the patient was first seen by Dr. Le Fever. He was then extremely prostrated, in much distress and very anemic. There was marked enlargement of the heart dullness, protrusion of the precordia, and feeble, rapid pulse. The respirations were fifty-six per minute. There was enlargement of the superficial veins, edema of the feet and legs, and the liver was engorged with blood as to fill almost the entire abdominal cavity. After four months' treatment, consisting of absolute rest in bed, abundant liquid nourishment, general tonics, and digitalis increased to heroic doses, the patient was able to go for short walks and take other gentle exercise.

As shown to the Society, the boy in general appearance

scarcely gave evidence of a previous illness. Systematic treatment was discontinued at the end of seven months. The gain in weight was from 28 lbs. to 40 lbs. during the seven months.

The points to which attention was called in the paper were:

(1) The heroic dosage of digitalis; the largest dose, which was continued for several weeks, being 24 gts. t. i. d. Perceptible lessening of this dose caused exacerbation of symptoms. The probable trophic influence of the drug was mentioned.

(2) The backward leakage through the mitral valves was thought to be due to stretching of that orifice.

(3) The persistent presence of vomiting was believed to be due to engorgement of the mucous membrane whose gastric given pressure was also suggested as a cause of vomiting.

Dr. A. O. J. KELLY: I have no desire whatever to invalidate the correctness of Dr. Le Fever's diagnosis, but I would simply like to ask why he does not consider the case one of endocarditis. It appears to me there is evidence of rather considerable hypertrophy, and in addition to the systolic murmur, I detect also a diastolic murmur and a diastolic thrill, and it seems to me also that there is accentuation of the second pulmonic sound. From these symptoms I rather infer that there might have been an endocarditis, and if the doctor has reasons for not believing so.

Dr. J. P. CROZER GRIFFITH: I also noticed the diastolic thrill and murmur. I think there must have been endocarditis present at some time.

Dr. EDWIN E. GRAHAM: Rest does a great deal for these cases. This child was in bed for months before there was any distinct improvement in the heart condition. We have all seen many cases which showed improvement only after being relieved of the strain and excitement of an active life. The point which Dr. Le Fever made in regard to the trophic influences of digitalis, I think, was tested two years ago by Dr. Hare, who read his paper before the Association of

American Physicians. Dr. Hare took four pigs from a certain litter and fed them for several months on small doses of digitalis; four pigs from the same litter were given the same diet, but the digitalis was omitted. When the animals were a few months old they were all killed, and those to whom digitalis had been given systematically presented in every instance a larger heart than those that had not received the daily doses of digitalis. I think the question of digitalis alone being held responsible for this child's improvement must be negatived; in the production of the improvement, we must add the factor of rest.

The point raised by Dr. Kelly, I think, is a very good one, so far as statistics show; unquestionably far more cases would show a murmur due to endocarditis than a murmur due to a stretching of the mitral orifice. The dilatation in this heart was largely in the ventricular, and while that dilatation has been largely overcome by the hypertrophy, I question very much whether the murmur that persists is due to a stretching of the mitral orifice, and I would be much more inclined to believe that it was due to a previous endocarditis. The fact that children often do not present any previous history of rheumatism or scarlet fever counts for very little. We not infrequently see cases in which the influence of rheumatism has been expended upon serous surfaces, and there are practically no manifestations found in the tissues of the joints.

Dr. C. W. LE FEVER: I would just say that I based my diagnosis very largely upon the following points: In the first place, the boy had been in a wasting condition for a considerable length of time, and his strength had been gradually failing. Then the edema of the feet, the persistent coldness of the feet and hands, the sweating, the relaxed condition of the circulation in the extremities, the rapid feeble pulse, the enlargement of the superficial veins, and the engorgement of the mucous membranes and the liver—none of these would have been apt to have occurred had the heart been hypertrophied or had full hypertrophic compensation occurred as the dilatation took place. I think, therefore, that the enlarged area of heart dullness and protrusion of the chest wall were due to dilatation, and on recovery I believe more or less contraction and return of the muscle fibres to their former condi-

tion took place. I do not believe that, during my connection with the case at least, that there was any evidence of acute endocarditis, and I made as careful an investigation as I could to determine this point. Neither did I observe any evidence of a former inflammation of the valves. My last examination was made two months ago.

Dr. J. H. JOPSON exhibited a case of persistent omphalo-mesenteric duct with prolapse.

He said the patient is well-nourished male child, aged 4 months, without history of any form of congenital malformation in the family. The cord dropped on the fourth day. At the end of two or three weeks it was noticed that the umbilicus was not of normal appearance, and at its site appeared a small, rounded tumor which has persisted and become slightly larger. It is now the size of a cherry, slightly conical or ovoid, is covered with dark-red mucous membrane, and its apex is an opening large enough to admit a probe, which can be passed in for a distance of an inch and a half. From this opening, the mother states, a small amount of fecal material escapes. When closely watched the tumor can be seen occasionally to rotate slowly on its axis with a deliberate, almost vermicular, movement. The case is evidently one of persistence of the omphalo-mesenteric duct, with partial prolapse through its umbilical opening.

The tumors which appear at the umbilicus in the infant are classified by Sauer as I., granulations at the site of the cord, granuloma umbilici or fungus umbilici; II., growths arising from the remains of the distal portion of the omphalo-mesenteric or vitelline duct, which are diversely considered either as true tumors of a sarcomatous nature (V. Huttenbrenner), or as merely eversions of a portion of the duct which has remained patulous, without altogether excluding the possibility of some tumor change (Ledderhose and Kolaczek); III., protrusions due to the eversion or prolapse of a complete patulous vitelline duct, which is the explanation found in this case.

The prognosis is not serious so long as it remains a mere fecal fistula, although internal strangulation of the bowel around the diverticulum may take place. If prolapse of the duct occurs, followed by prolapse of the bowel, forming a

bicornale, V-shape, or sausage-shaped protrusion from the umbilicus, intestinal obstruction and strangulation are the natural consequences.

The treatment is very unsatisfactory. If prolapse has not occurred, repeated cauterization or paring or stitching of the edges may close the opening. If prolapse has occurred, operative measures, such as paring and stitching the edges, ligation of the mass, and the use of the galvano-cautery are attended with much risk, as a fold of peritoneum surrounds and extends into the prolapse, and will therefore be opened. Attempts at the reduction of a large prolapse are also very dangerous. The most radical, but most logical treatment consists in opening the abdominal cavity, excising the diverticulum, and with it the edges of the umbilical opening, closing the bowel and sewing up the abdominal wall. The mortality is unfortunately very high, twenty-four operations having given nineteen deaths (Sauer).

Dr. L. J. HAMMOND: I saw a case of this character about three years ago in a child one day old. The condition was, of course, much more readily outlined than this which has gone on, and the irritation has set up considerable granulation, so that the parts are not so readily distinguished. I did the usual laparotomy, and endeavored to do end to end anastomosis, this could not be accomplished until the bowel had been divided both above and below its attachment to the urachus, of which it seemed to form a part. The child died within the next twenty-four hours.

Dr. L. J. HAMMOND read a paper entitled, "**Remarks on the Diagnosis of Cerebral Abscess in Children, with a Record of Five Cases.**"

He said that pyemia of the encephalon occurs in children usually as a result of suppurative inflammation of the cavities accessory to the brain. The period therefore when it is most to be expected is from the beginning of dentition, through the time of special liability to the exanthematous diseases. Traumatism is also a frequent cause; many times when apparently trifling it may lead to deep seated disease. The same pathologic conditions cause usually cerebellar abscess in children, while in adults the disease is generally in the cerebrum or

extra-dural. This is probably explained by the fact that the outer table of the bone in children is less dense, and this permits of an early rupture and spontaneous evacuation of the pus from whatever infective source it may arise. There seems, at least to be no other explanation for the occurrence of abscess in this portion of the encephalon in the five cases that have come under Dr. Hammond's observation; there had been during this same period three cases of cerebral abscess in adults from the same infective source. It is obvious therefore from the frequency of its occurrence and its great fatality that a definite symptomatology should be recognized, in order that early operative intervention may be instituted. The symptoms that have been universally present are: discrepancy between the temperature and pulse, the former being subnormal, while the latter ranges from 120 to 160; flexion of the extremities; dilatation of the pupils; uncontrollable restlessness, with a half unconscious condition; peculiar indisposition on the part of the patient to obey requests made; sugar in the urine; slow respirations; swinging of arms and inclining head toward one side and absence of paralysis. The observation of these symptoms made it possible to locate abscess in the cerebellum in four of the five cases that have come under Dr. Hammond's observation.

Dr. J. P. CROZER GRIFFITH read a paper entitled "Brief Reports of Interesting Cases."

(1) Acute Yellow Atrophy in a Boy of Seven Years.

—The disease began as an ordinary icterus. Later coma developed, the icterus was intense, vomiting of blood occurred, the liver became much reduced in size, and leucin and tyrosin were found in the urine. No autopsy could be obtained.

(2) Two Cases of Thigh Friction.—The first was in a girl of 16 months, seen but once. The movements were characteristic. The second was in a girl of 13 months. The affection began at the age of 8 months. Friction was practiced very frequently during the day, almost whenever the child was not diverted. The act was attended by redness of the face and perspiration. No cause could be found in the condition of the genitals or the urine.

(3) Nervous Incontinence of Feces.—The boy, now 8

years old, and always a nervous child, had never learned to control his bowels. Fecal evacuation would occur once or oftener in the day, the formed stools being passed in the clothing before the child could reach a place for relief. The condition was associated with incontinence of feces and habit spasm. Rapid recovery took place under the use of arsenic and belladonna.

(4) **Peritonitic Pneumonia.**—This case, a child of 4 years, illustrated the simulation of peritonitis pneumonia, which is sometimes seen. The child was supposed by the attending physician to have appendicitis, and an operation was asked for, but refused. There were absolutely no symptoms of pneumonia, and those of appendicitis were most suggestive. In a day or two all the latter had disappeared, and the pneumonia became evident.

(5) **Meningitic Typhoid.**—A case illustrating the marked simulation of meningitis by typhoid fever, the case appearing at the first to be undoubtedly meningitis.

(6) **Angio-neurotic Edema in a Child of Twenty-five Months.**—Associated with some with urticaria and indigestion, marked edema of the whole right hand and forearm and of half the left hand developed, and lasted some days. Later a similar attack affecting principally the left hand. Some spots were seen on the face also.

Dr. BERTHA LEWIS: I would like to ask Dr. Griffith what he believes to be the cause of thigh friction. I have had a great many of those cases, all of which have been relieved by the separation of adhesions to the clitoris. It seems to me there has been very little literature on this subject of the deformities in the genitalia of the female. I find upon reference to the latest contribution on the diseases of children no mention of this condition. I had the opportunity some two years ago of seeing a case with Mr. Anderson in London. In discussing this condition he told me that it was so generally overlooked, that in instances he had been called upon to operate where the adhesions to the clitoris had confined the smegma until the accumulations acted as an irritant, producing abscesses which burrowed into the pelvic cavity.

Dr. E. E. GRAHAM: This is a matter of special interest, and one which lately has been most carefully studied, is the relation between typhoid fever and meningitis. A complication of the two diseases is supposed to be extremely rare. Meningitic typhoid fever is not nearly so rare. In other words, true typhoid fever complicated by meningitis, not due to the typhoid bacillus is supposed to be unusual, and typhoid fever with the meningitic symptoms due to the typhoid bacillus is occasionally met with. It is a matter claiming a great deal of attention, and I think the Society should discuss it.

Dr. J. P. CROZER GRIFFITH: I would say, in reply to Dr. Lewis' inquiry about the case of thigh friction, that I could find nothing wrong about this child's genitals, and that there was nothing abnormal in the urine. The child was a very happy, active one, fond of being entertained, and quite active. Whenever any one approached the bed on which she was sitting—she sat on the bed most of the time—she would commence to move her arms and legs at a great rate under the influence of the thought that she was to be played with. I think it was this unusually active movement of the legs, or the sitting up position, which was the starting point of the thigh friction in this case.

We cannot regard thigh friction at this early age as evidence of any moral obliquity, or to measure development of sexual passion. It may be so, of course, but there is no reason to assume it. However, if it is allowed to persist, the habit may be developed, which it would be difficult to check. With reference to meningitic typhoid fever, I recall that the autopsies made in Munich showed that meningitis is an exceedingly rare condition in typhoid fever. Meningitic symptoms are, however, very common, and I think particularly so in children, and I report the case as a typical example of the condition. Still I do not recall ever having seen another case in which the meningitic symptoms were so marked at the onset. The interesting thing to me was that in the onset meningitis was so marked.

Dr. GEORGE WOODWARD reported "**A Case of Streptococcus Milk Infection.**"

Dr. Woodward remarked that Dr. William Royal Stokes, in his report to the Baltimore Health Department* upon the microscopic examination of milk, concludes that "the microscopic examination of the centrifugalized sediment of the milk from a herd of cattle, if found to contain an excessive amount of pus, should suggest a careful inspection of the herd." He excludes from the herd a cow yielding pus-containing milk in which the average number of pus cells per field in the stained centrifugalized sediment from 10 cc. of milk shows more than five pus cells to the field of a $\frac{1}{12}$ inch oil immersion lens.

Acting upon the conclusion of Dr. Stokes, the Philadelphia Board of Health has undertaken a similar investigation. One or two samples of milk daily are delivered to the bacteriological laboratory for examination and report.

In the first month the laboratory found three samples of milk containing pus corpuscles and streptococci and one containing pus without the organisms of suppuration; from the latter, however, streptococci were obtained by cultivation.

Dr. Woodward then reported one case to illustrate the value of this work. A woman brought to the milk inspector a sample of milk from her usual household supply, stating that whenever she drank the milk it made her "deathly sick." This milk, upon microscopic examination, gave a striking picture of pus corpuscles and streptococci. One field reproduced as a photo-micrograph was shown.

In this case the milk inspector stopped the sale of the milk within the city limits. At the same time he wrote to the dairyman who sold the infected milk in bulk to the city dealer, advising him to consult a veterinarian, and stating that his milk would not be admitted for sale within the city limits until he furnished a clean bill of health for his herd of cows. The veterinarian reported: "Rushland, 1-10-99. To whom it may concern: This is to certify that I have, this day, carefully examined the dairy, consisting of seventeen cows, belonging to Chas. C. Parry, of Rushland, and find fifteen of them to be in good condition; one Jersey, with first calf, giving bloody milk from the left anterior quarter of udder, and graded Alderney giving pus from the right posterior quarter of the udder. Theo. T. B. Kirk, D.V.S."

* Annual Report Health Department to Mayor and City Councils of Baltimore for year ending December 31, 1897.

Dr. JAMES H. MCKEE discussed "**The Developmental Influence of Play.**" (See PEDIATRICS, page 449).

The paper first drew attention to the influence of play in the development of the lower animals, showing that the beneficial results are not confined to motor and psychomotor functions, but that the animal might be advanced through play to a higher plane of intelligence.

Spontaneous play may produce similar results in the case of the child. The muscles, the spinal centres, the basal structures, the psychomotor centres, the intellectual centres and the association centres share in a common development.

The pedagogist know what Basedow achieved through the medium of play, and how much stress Froebel laid upon the same agency. The psychologist can advance many reasons in the support of play as a developmental factor. The child's attention is engaged thereby; play affects him in an agreeable manner, and plays are probably genetic in character, etc. Following Gulick, numerous plays were mentioned which characterized the different periods of infancy, childhood and adolescence. Some examples of gross parental ignorance were cited, and the paper closed with a discussion of the *moral* and *sociologic* aspects of the question.



PRACTICAL NOTES

The Treatment of Favus.—PETERSON (*Archiv für Dermatol. u. Syph.*, 43 Bd., 44 H., 1898), after first softening the crust of favus by means of a one-per cent. carbolated vaseline ointment and washing it away by soap and water, paints the diseased area with tincture of iodine. It is not necessary to remove the hair.—*Therapeutic Gazette.*

Vaginitis in Children.—The following formula is given in the *Revue de Chirurgie* of December 10, 1898:

Oil of eucalyptus.....	12 grains
White wax.....	90 grains
Cacao butter... ..	90 grains
Make four suppositories.	— <i>Therapeutic Gazette.</i>

Bronchial Catarrh after measles and pertussis:—

R̄	Creosoti.....	i
	Ol. Morrhuæ.....	90
	Saccharin.....	0.05

M. Sig.—One dessertspoonful up to six daily.

—HOCK, *Medical Record.*

Acute Tonsillitis in Children:—

R̄	Tinct. aconiti.....	℥ viij.
	Liq. ammonii citratis.....	℥ ij.
	Syr. aurantii.....	℥ iss.
	Aq. dest.....	q. s. ℥ ij.

M. Sig.—Teaspoonful every three hours for a child of five years.

—ASHBY, *Medical Record,*

The Treatment of Eczema with Picric Acid.—According to Dr. BROUSSE it gives very favorable results, especially under the following conditions:

1. In acute, vesicular, weeping, or, at least, in all red and moist forms of eczema.
2. In all acute exacerbations of a chronic eczema.
3. In impetiginous eczema of children, which, as we know, stubbornly resists all treatment.

4. In chronic eczema, to relieve itching, the following saturated solution should preferably be employed:

R̄ Acid picric.....	12.0
Aq. fervid	1000.0

Allow this to cool and pour off the supernatant liquid. This solution is painted on the diseased parts, including a small surface of the normal skin at the boundary of the eczema. Then cover the parts with hydrophile gauze, which has also been previously soaked in the solution and well wrung out. Over all a layer of cotton is laid. This compress which becomes a dry dressing in the course of a few hours, is to be renewed every second or third day, taking great care that the epidermis remains in tact. At the close of treatment, the skin is frequently rough and harsh, which may, however, easily be remedied by the application of boreated vaseline.—*Les Nouveaux Remèdes*, 1894, No. 8.

Vulvitis Gangraenosa (*Noma genitalium*) treated with Behring's antitoxin.—FREYMUTH and PETRUSCHKY report a case of a three-year-old, very delicate girl, who was suffering with measles, and in the course of the disease, which was accompanied by a high fever in addition, developed hoarseness, and the spectacula of gangrene of the whole of the external genitals, extending from the anus to the mous veneris. The dysphagia present, together with a severe laryngitis and rhinitis accompanying the affection of the genitalia, raised the suspicion of a mixed infection of morbilli and diphtheria, and for this reason an attempt to treat with Behring's antitoxin was decided upon. Soon after the second injection, a demarcation surrounding the whole necrotic surface was observed. The necrotic tags were found to contain both cultures and by Neisser's staining process, typical *Löffler's* bacilli. In the course of a few days, pharyngeal deposits appeared, which disappeared, however, together with the other symptoms by continued antitoxin injections. The integumentary defects of the vulva have healed perfectly. As bearing on this case Freymuth discussed the relation of noma genitalium to diphtheria, and pointed out that the noma may under certain conditions be excited by the bacilli of diphtheria, and that it could be cured in such cases by the causal treatment of diphtheria, namely, with antitoxin.—*D. Med. Wochenschr*, 1898, No. 15.

ABSTRACTS

TREATMENT OF LARYNGEAL SPASM.

Dr. K. HUGEL (*Münchener Medicinische Wochenschrift*, 1898, *xliv.*, 1406), in an article, points out the fact that a hypertrophic, or inflammatory enlargement of the uvula, may, in some cases, be the cause of the spasm, and that this has already been recognized in diseases of the pharynx and larynx by various authors, but is, as a rule, neglected in general practice. Various authors for two hundred years, and longer, have frequently thought that they had discovered that the cause of laryngeal spasm lay in a certain organ, or in a certain disturbance of the organism, but new observations did not support these former views. The thymus gland (asthma millari) later rhachitis dentition, catarrhal affections of the respiratory organs, unhygienic conditions, artificial feeding, etc., were looked upon as its cause. One located the seat of the disease in the brain, another in the spinal cord, the condition itself being regarded as a reflex-neurosis. Whether this is caused by pressure exerted within the pigoar foramen by the interior jugular vein on the vagus nerve, from a relaxed intra-jugular ligament, or whether the sensitive extremities of the nerves of the larynx are irritated, and a peripheral irritation is thus exerted from another locality (stomach-skin) will, in all probability, differ with each case. Among those who have appreciated the importance of the uvula in laryngeal spasm, Mantle, an English physician, stands most prominent. He reported a case where he first treated the enlarged uvula with astringents, and internally with bromides, both of which failed to bring relief. The proposition to amputate the uvula, was not assented to by the parents, and was only permitted after another physician had failed to effect a cure. Relief followed at once, and the attacks ceased. B. Fraenkel also mentions spasm of the glottis as a symptom produced by an elongated uvula touching the larynx. Reflex neuroses of the nose, of the naso-pharyngeal cavity, etc., are mentioned by Mackenzie, Hack, Woakes, Baumgarten, and others.

In searching for a treatment of an enlarged uvula, we must not lose sight of its cause. This may be congenital, due to edema of the glottis, or a result of chronic catarrh, or muscular paresis. Acute catarrhal inflammation of the uvula, and papillomata of the latter, may, however also induce laryngeal spasm. If we discover the cause early enough, proper therapeutic measures may be employed. If, however, true attacks of laryngeal spasm are present, an energetic, operative interference, by the necessary shortening of the uvula (as a rule the ablation of a few millimeters is sufficient), is to be recommended, on account of the high mortality which occurs in these cases (Wunderlich, one-third of cases treated; Reid, out of 289, 115 deaths), and especially as the danger of an operation is small. The wound, as a rule, heals readily in a few days, without any further trouble. In the typical inspiratory stridor, Avellis, who assumes tracheostenosis thynica as the cause of chronic dyspnoea, an

enlarged uvula is not of itself to be considered etiologically. The picture of a *chronic* dyspnoea may, however, frequently be presented from the continued irritation which such a uvula causes, by contractions in the larynx.

CONTRIBUTION TO THE QUESTION OF THE SO-CALLED CONGENITAL STENOSIS OF THE PYLORUS AND ITS TREATMENT.

M. PFAUNDLER (*Wiener Klinische Wochenschrift*, 1898, xi., 40). The whole study of "congenital stenosis of the pylorus" is still founded on weak premises; it has by no means as yet been demonstrated, that a disease of this kind really exists, and the reports made up to the present time, are not at all of the kind to furnish convincing proof. In fresh dead-bodies of infants we find it in every third case—in older children, still more frequently—the stomach in a peculiar condition of persistent muscular rigidity. "The wall of the central cavity is changed in the immediate neighborhood of the ring of the pylorus to a protruding tumescence, it is thickened rigid to the touch, and covered with a mucous membrane in ridges. The pylorus itself, is very narrow, on account of the persistent contraction, and frequently barely allows the passage of a sound of medium size, and only under great pressure are we able to pass water into it. Quite frequently, the last segment of the actual wall is found to protrude for some distance into the duodenum in the form of a plug, in such a manner that we are very much reminded of the picture of the cervix uteri as it protrudes into the vagina. Behind the pylorus-plug a circular fornix is felt. In the microscopical examination of the antral wall, its abnormal thickness is demonstrated as due to the abnormal breadth of all the muscular layers—especially is the layer of circular muscular fibres which, according to the histological picture may readily simulate a hyperplasia, involved." This systolic condition was found by Pfaundler in stomachs which had been demonstrated as perfectly healthy by a careful functional and histological examination, quite as frequently as in diseased stomachs of various kinds. This finding is explained by Pfaundler as in all probability due, not to rigor mortis, but to a fixation of a normal functional phase of the stomach which took place at the moment of death. If the muscular tissue of such a systolic stomach is allowed to relax spontaneously, or by washing it out with water, we are able to demonstrate that the circumference of the ring of the pylorus becomes nearly normal, so that, contrary to our finding at the autopsy, a pylorus of normal size is present. This normal size is not as great, moreover, as is usually stated—the average circumference of the pylorus found by Pfaundler in a large number of cases did not exceed, even when the organ was passively distended by a pressure of 30 cm., of water 2–3.3 cm. in the first year of life, in an infant 6 weeks old, 2.3 cm. When Pfaundler first perused the literature of "congenital stenosis of the pylorus" he found, that the descriptions were identical with those which he had himself given of the systolic stomach of the dead body, so that a suspicion of their being confounded could easily arise.

What, then, was the substratum of these cases which Stern and others observed during life and classed from clinical indications in the same

category with this disease? A truly characteristic clinical finding of congenital stenosis of the pylorus in the infant has been, for the first time, described exactly by Finkelstein; (no one would base a diagnosis on symptoms, as long continued vomiting of a stubborn character, constipation, emaciation, etc., especially when these first occur in a child only a few weeks old!) according to his view the following symptoms are of a diagnostic import: Vomiting following even small quantities of food, visible peristalsis of the stomach, the palpation of a resisting tumor in the neighborhood of the pylorus, and eventually gastrectasia. Peristalsis of the stomach may, however, also readily be observed in a perfectly healthy infant at times, if the abdominal parietes are relaxed and quite thin; Finkelstein had, therefore, probably in mind abnormally strong, abnormally continued movements which also had an abnormal ending (antiperistaltic) movements. As regards the tumor in the neighborhood of the pylorus, on account of the covered position of the pylorus behind the liver of the infant, demonstration by palpation is only possible if at the same time the antrum is situated extremely deep. These signs which, to a certain degree, are also pathognomonic were not present in Stern's case, for example. In future we will be able in questionable cases by a careful examination of the stomach with the sound, and especially by gastrodiaaphania, to arrive at a positive diagnosis.

Secondary dilatation of the stomach was hardly ever present in the cases examined anatomically, or, at least, was not very marked; the same may be said of the compensatory hypertrophy of the muscular system of the stomach. Now, as to the answer of the above question? Clinical experience has taught Pfaundler that we meet with very distinct disease-pictures in the infant, which can hardly be explained in any other way than by the supposition of an intestinal stenosis in the neighborhood of the pylorus; these stenoses are not always present immediately after birth, and may disappear spontaneously after weeks, or months. Although this temporary stenosis may lead to the gravest forms of inanition, Pfaundler did not see a single case end in death, on the other hand took place, a gradual improvement and a cure. Pfaundler, therefore, shares the views of Thomson, that we are here dealing with a congenital, or more frequently, with a spastic contraction of the pylorous-muscle occurring in the first weeks of life. No anatomical reason exists for this, but a purely functional affection confronts us here in all probability, which may easily be developed, on account of the great irritability of the sensory-motor apparatus in the infantile stomach (which is shown by the great inclination of healthy infants to vomit).

Operative interference, therefore, is by no means indicated, especially as the children are usually greatly debilitated. We should rather favor the spontaneous disappearance of the spasm, for example, by treating with local narcotics, the application of the anode, moist and warm applications, long-continued baths, and especially by washing out the stomach, which exerts a relaxing effect on the wall of the stomach, as Pfaundler was able to prove; long continued dietetic measures should, of course, also be employed.

PEDIATRICS

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ORIGINAL ARTICLES

A CASE OF GENUA VALGA, WITH REMARKS ON OSTEOTOMY.*

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THIS young girl is seventeen years old, and has been employed in a rubber factory for the past two years, her occupation obliging her to be on her feet the greater part of the time. She is anemic, and not well nourished, as you see. Her family and personal history give us no particular indications as to the affection for which she comes to obtain relief.

The patient says that for about two years her knees have given her trouble, from the fact that they bend inwardly, and that after walking considerable pain is felt. Inspection of the limbs immediately reveals a typical genua valga, but the same pathological condition does not exist in each limb, for by closer examination you will observe that on the right the deformity is due to an hypertrophy of the internal condyle of the femur, while on the left there is an hypertrophy of the internal condyle of the tibia.

This afternoon I shall operate on this girl, in order to restore the normal shape, and consequently the proper functions of the limbs. On the femur, an osteotomy by McEwen's method will be done, while a wedge-shaped osteotomy will be done on the tibia of the left leg. Now, in order that

*A Clinical Lecture delivered on February 14, 1899.

you may understand the steps and indications for osteotomy, I beg to say a few words regarding this operation, and those affections calling for this treatment.

Osteotomy was not often undertaken by the older surgeons, on account of the disastrous results following infection of their wounds, although the operation was performed as early as 1826 by Rhea Barton. Finally after the introduction of aseptic surgery, the operation again came into favor, and in 1884 McEwen, of Glasgow, published statistics of eighteen hundred cases of osteotomy, with only five deaths, all being due to specific disease, such as diphtheria, pneumonia and phthisis.

The operation of osteotomy, as performed to-day, offers but little danger, the only untoward complication that can arise being fat embolus and infection of the wound. When the bone is separated by the incision, tiny drops of bone marrow sometimes enter the lumen of the veins divided in the operation, and are carried along in the circulation to the right heart, and from there they enter the lungs by the arterial circulation, and block up the capillaries. If the amount of fat globules be in any quantity, the lungs will be pretty well filled, and death takes place from paralysis of the respiration. The use of Esmarch's band, I believe to be responsible for fat embolus in many instances, and I always endeavor to do without artificial anemia in bone operations, for this reason.

With all the recent progress made in surgery, the technic of osteotomy has been improved and considerably simplified. In the older operations, the bone was exposed by a lengthy longitudinal incision, or by a flap, and was then sawed. Another technic, advocated by von Langenbeck, was a small, cutaneous incision, the bone being cut without being exposed. This is called sub-cutaneous osteotomy.

In sub-cutaneous osteotomy, a small incision is made in the integuments, and with a drill a passage is made through the middle of the bone. A chain saw is next passed through the drill hole, and the bone is sawn, first on one side and then on the other, to a certain extent. The saw is then removed, the skin incision closed by sutures, and the bone is then broken by manual force.

Osteotomy is either linear or cuneiform, that is to say a wedge-shaped piece is excised from the bone; in the linear form the bone is chiseled directly through. McEwen's opera-

tion may be considered as an intermediary. In the operation devised by the noted surgeon of Glasgow, a set of different-sized wedge-formed chisels are used.

Osteotomy may be either partial or total. In the first instance a small amount of bone tissue is left uniting the fragments, while in total osteotomy the bone is chiseled completely through. The principles of Langenbeck's sub-cutaneous osteotomy are now universally adopted for linear osteotomy, but this method cannot be applied in the case of cuneiform section of the bone, where we must use the mallet and the chisel instead of the chain saw. All types of osteotomy may have to be combined in certain instances, according to the deformity present in a given case.

As to conditions necessitating osteotomy, we have angular deformities of the limbs, badly united fractures, ankyloses of various varieties, and contractures of the joints. Genu valgum and pes valgus and varus are usually, if not always, due to rachitic changes in the osseous system.

Genu valgum, which is one of the most frequent manifestations of rachitis, develops partly during the first years of life, and partly during or after the age of puberty, especially in subjects whose work obliges them to be much of the time on their feet, either standing or walking.

This fact has been explained by some, by the hypothesis of a tardy rachitis; in other words it is to be admitted that rachitis can attack the bones, not only during childhood, but after the age of puberty has passed.

The adversaries of this theory suggest an over amount of weight being placed upon the knee joint, as the etiological factor of genu valgum in adolescents, and deny the possibility of rachitis in young adults.

Now, in point of fact, the occurrence of tardy rachitis has, as yet, not been proven scientifically, but what is very evident is that genu valgum does frequently occur in the class of patients above mentioned, and it is of daily observation to meet with young patients who are working all day standing up, whose bones are not sufficiently hard to bear their burden, and where the exact pathologic change is as yet not clearly defined which can account for the soft condition of the bone. We cannot make a definite distinction between a genu valgum due

rachitis, and the static variety of the affection as has been attempted by many authorities.

The rachitic type of genu valgum is also a static one, inasmuch as the inward curve of the bones in little rachitic children will only occur in consequence of the pressure of the weight of the body; and again in those cases where the over use of the limbs is the supposed etiological factor, it is naturally assumed that there is an abnormal lack of resistance in the bone substance, and it is a question whether or not it is due to a true rachitic process.

Genu valgum may be produced from the fact that the internal condyl of the rachitic femur undergoes hypertrophy, while the external condyl becomes atrophied. From this condition, the angle formed by the femur and the tibia, which is open outwardly and under normal conditions is about 170° , will be decreased several degrees on account of the greater abduction of the tibia, which is due to the hypertrophy of the internal condyle. An inward bending of the tibia may also produce a genu valgum, and often both conditions will be met with in the same patient, and this was well illustrated in the case just shown you. It might also be assumed that a genu valgum could be produced by an inward direction of the tibia and fibula, similar to the condition known as genu varum, which may be due to both an outward curve of the femur or tibia. And lastly, as I have shown you in our patient, an hypertrophy of the internal condyl of the tibia may cause a genu valgum.

Such conditions will be readily understood if we make the following considerations: When a rachitic child makes its first attempt at walking, the weight of the body will produce an inward bending of the femur, if this particular bone is the one exclusively attacked by the pathological process, or at least more so than the others. The bending would naturally occur near to the point of support, consequently in this case it would be in the neighborhood of the knee joint. The irritation produced by the pressure exercised on the internal condyle would explain the hypertrophy.

Now, if the tibia and not the femur is the principal site of rachitic lesions, the weight of the body will, in this case, produce a combination of deformities, and if the disease is more manifest in the lower third of the tibia, we will then have a

pes valgus as well. It is of the utmost importance that you should be acquainted with these various conditions, because the treatment can then be rationally carried out. Consequently, the operative treatment of genu valgum will be an osteotomy of either the femur, tibia or fibula, according to the conditions presented in a given case. In 1894 I published the case of a little girl of ten years on whom an osteotomy of the tibia and fibula in both legs in their lower third, and an osteotomy of the femur on the right was done for rachitic deformity, so you see how complicated cases may be.

The operations devised for the correction of genu valgum are very numerous indeed, some cases requiring an osteotomy of the femur alone, while others demand an osteotomy of the tibia for their cure. Ogston's osteotomy of the femur is not any longer performed, and was simply a linear section through the internal condyl of the femur. The knee joint was first opened, and then a chain saw was introduced at the inner edge of the femur, and the internal condyle was sawn off; after this had been done, the shape of the limb was corrected.

When the condyle was cut through, it would slip upwards and would unite with the bone at a point higher up. The principal danger in this operation is the opening of the joint, which often will give rise to disturbances in the process of repair, for even if asepsis is perfect, the opening into the joint is frequently followed by suppuration, a fact that may be explained by the anatomical structure of a joint. A joint is lined with synovial membrane, which is serous in nature, and like all serous membranes, it is more prone to infection than any other tissues of the body, and if there are any pyogenic bacteria in the general circulation, and it is a well-known fact that they are sometimes accidentally present in the blood, they will accumulate in the joint, and grow in the excellent culture soil offered them after an osteotomy, namely, an effusion of blood.

Another danger in Ogston's osteotomy is due to the presence of small particles of bone chipped off during section, which may accumulate in the joint, and set up inflammatory phenomena and ankylosis, or arthrititis may result. It is certain that Ogston's operation has achieved many successful results, with excellent functional use of the limb, and a cosmetic result far beyond any other method, but for all that, I prefer other methods for the reasons already stated.

Condylotomy, which was devised by Swan, is a modification of Ogston's osteotomy. An incision is made over the inner aspect of the femur, and a special kind of chisel is introduced, the proper oblique direction being given the instrument. No mallet is used. The operator seizes the handle of the chisel firmly, and pressing the instrument against the bone in the required direction, sawing motion is made, and the condyl is cut, and finally completely detached, by using the chisel as a lever. The limb is then forcibly corrected.

Annandale and Chiene's operations must also be recalled. The first-named is an osteotomy of both condyles, while the second is a cuneiform osteotomy of only one condyle. But all these technics have the same objection as Ogston's operation, namely, the opening of the knee joint.

Macewen was the first to devise an operation in which opening and resection of the joint were avoided, and he performed his first extra-articular cuneiform osteotomy of the femur in 1872. The operation is done as follows: An incision about five centimeters long is made about four fingers' breadth above in the articular line on the inner aspect, and the knife is brought directly down on the bone through the muscle. The large vessels are out of the way, and any injury to them need not be feared. A chisel is then introduced into the wound along the blade of the knife, using the latter as a director, and a wedge-shaped piece of bone is excised. The incision is then closed and a drain inserted, and the limb is put up in plaster in a corrected position.

Later on Macewen advised a linear instead of a cuneiform osteotomy, and obtained just as good results, and in fact, when a wedge-shaped piece is excised from the bone, the space left is immediately filled by blood, which would become organized and be included in the formation of the callus.

Now, there is just one point on which I would insist, and that is stripping off the periosteum before making the cuneiform excision. It is fairly easy to do this if you use a periosteum elevator, such as I show you here. The blade is narrow and forms with its long handle an angle of about 160° . By carrying the incision through the muscle and periosteum you can easily insert the elevator and strip off the bone covering sufficiently for the chisel to be passed between the periosteal flaps.

The operation of osteotomy is applied to genu valgum, whether produced by an hypertrophy of the internal condyl or to a curve at the lower third of the femur. If now the course of knock-knee is due to a similar pathologic condition of the bones of the leg a subcutaneous incomplete osteotomy of the tibia and fibula may be done or an incomplete cuneiform osteotomy of the tibia alone can be performed. Cuneiform osteotomy of the tibia and linear osteotomy of the fibula is recommended by Schede.

Now, if it be recalled that genu varum is also produced by a pathologic curving of the femur, there being an hypertrophy of the external condyle of the tibia, it will readily be seen that osteotomy is indicated for the correction of this deformity as well. The tibia is the bone usually at fault in genu varum, and in most instances a wedge-shaped or linear osteotomy of this bone will be quite enough to correct this condition.

Pes valgus, varus, or varo-equinus also require osteotomy for their cure. When correcting these deformities the point is to give the foot a normal position, which is accomplished by wedge-shaped excisions or extirpation of certain bones of the foot or the malleoli.

The bones mostly concerned are the talus, calcaneum, os cuboideum and naviculare, the internal malleolus of the tibia and external malleolus of the fibula. In flat-foot, for example a wedge-shaped excision comprising the head of the talus, the anterior articular surface of the calcaneum, a large portion of the os cuboideum and a smaller amount of os naviculare is sometimes indicated.

After this excision the correction of the foot from plantar flexion, adduction, and supination into a nearly normal position can be obtained. In other cases a simple extirpation of the talus is enough, while if, for example, you are dealing with a badly united fracture of the malleolus, which has produced a traumatic pes varus, a wedge shaped osteotomy of the external malleolus and dislocated talus will produce the desired rectification of the deformity. Some cases of varo-equinus are best treated by extirpation of the talus.

Tarsectomy in infantile paralysis is sometimes indicated where the tensor muscles are so weakened that a total inversion of the foot results, but as each case requires separate consideration I cannot enter into the discussion of this subject today.

Another condition to be mentioned is hallux valgus, a deformity that is usually produced by improperly fitted footwear. The toes are pressed over one another and tightly together, and the integuments being easily excoriated, infection takes place, often resulting in abscess formation. The head of the first metatarsal bone will usually be found greatly hypertrophied, and if by suitable shoes the deformity cannot be corrected we must resort to the excision of the hypertrophied part of the bone.

Badly united fractures that require osteotomy are not so often met with as rachitic conditions of the bones. In fractures where union has taken place with the fragments in bad approximation, it is not so much the deformity as it is the shortening of the limb that calls for operation. The femur is the bone most frequently calling for osteotomy, while a vic-

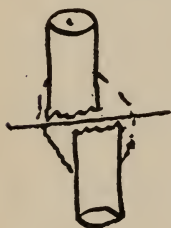


FIG. I.

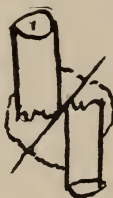


FIG. II.

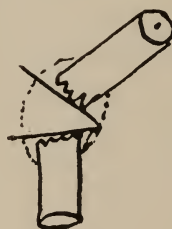


FIG. III.

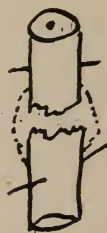


FIG. IV.

iously united fracture of the arm would not necessitate an operation, and a shortening of the humerus of as much as six or seven centimetres will not inconvenience the patient sufficiently to justify osteotomy, while if it were the femur this amount of shortening would practically incapacitate the patient.

Practically we have four types of vicious healing after fracture, as follows:

- 1.—Lateral union of the fractured ends.
- 2.—Longitudinal displacement.
- 3.—Angular displacement.
- 4.—Peripheral dislocation where the displacement is produced by the rotation of one or both fragments. (See Figs. 1, 2, 3, and 4).

Longitudinal and angular displacements are the only ones that would produce a shortening of the limb, while in lateral

union and peripheral dislocation the length of the femur will remain practically the same as before fracture.

In longitudinal displacement an oblique section of the callus is all that is required, while in angular displacement a wedge-shaped osteotomy should be performed, the size of the excised portion of bone varying with the degree of shortening present, which, in itself, is in direct relation to the amount of the angle formed by the fragments. Linear osteotomy may occasionally be indicated in lateral union or displacements by rotation of the fragments.

One point more and I shall have finished. Inexperienced operators are most likely to be at loss as to how much bone should be cut out in the wedge in order to produce just enough correction of the limb. The solution of the problem is easy;

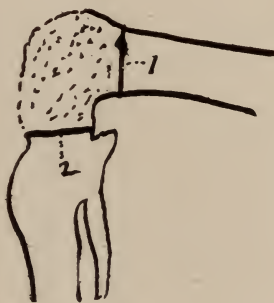


FIG. V.

1. Incision carried perpendicularly through the long axis of femur.
2. Incision carried perpendicularly through the long axis of tibia.

all that you remember is to cut down on each bone with your chisel *perpendicularly* to the bone. For example, in osteotomy of the knee (see Fig. 5). The femur is first cut through at right angles with its long axis and then the tibia is likewise treated. You see that although a seemingly large amount of bone is thus removed, still, by following out the rule above given, you will not have taken out too much or too little for the proper correction of the deformity.

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CONVULSIONS IN CHILDREN.*

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WHILE, strictly speaking, a convulsion is only a symptom and not *per se* a well defined disease, yet as this symptom is the only prominent one in the majority of cases and the etiology and pathology so varied and oftentimes so obscure that we cannot but feel that the subject is one of so much importance in the life of infants and early childhood that it should and can be treated as a separate and distinct clinical disease.

We are all perfectly familiar with the bedroom scene of a child in convulsions—the anxious and distressed parents, the sympathetic Job-comforting friends—each vying with the other in telling the greater number of deaths they have known from this trouble, the distorted countenance of the child, the clonic and tonic movements, the opisthotonos, etc., all make a picture that at once appeals to the practitioner to relieve this one symptom, it matters not what its origin or its pathology.

This commotion of the nervous system—the outburst of a “dynamo-pregnant nerve centre”—that we call convulsions or eclampsia, is a common phenomenon of infancy and early childhood. It is at this period of life that the nervous system is immature and undergoing rapid development.

You gentlemen will doubtless remember that in my paper on Pediatrics, read before you some time ago, I stated that the excitability of the nervous system was one of the characteristic distinctions of early life; that the nervous system was but in a preparatory condition; brain large; large per cent. of water; gray and white substance differing but little in color and composition; spinal cord lacking consistency. First month after birth conducting fibres between undeveloped brain and pyramidal fibres of chord perform no function. Thus first movements of the new born are not controlled by will power but subject to reflex exclusively. This reflex excitability and lack

* Read before the Falls City Medical Society.

of inhibitory power of centres continue for some two years or more in children.

Ever keeping this in mind, that convulsions always indicate cerebral or cortical irritation, possibly the best classification of etiological factors is that given by Sachs in his most excellent work.

These are divided as follows:

1. Convulsions occurring in first few days of life are, as a rule, the result of meningeal hemorrhage, due either to protracted labor or instrumental delivery. I, myself, think that there are few cases where instrumentation, properly employed, ever produces permanent injury.

2. Convulsions may be due to organic disease of the brain, tumor, abscess, meningitis, or vascular lesions.

3. They may (and do generally in children under two years of age) mark the onset of acute infectious disease. The rigor of the adult is shown in the child as a convulsion. I have seen such a condition in many cases of pneumonia, scarlet fever, measles, etc. I agree with Sachs that the initial convulsion is often apt to be misleading to the general practitioner, making him first think of some organic cerebral trouble, such as meningitis.

4. Convulsions of reflex origin.—Here, I think, we find the most common source of etiological explanations. There is such a myriad variety of peripheral troubles that can, and sometimes do, bring about such convulsive seizures that it is not surprising that we look to these first in our examination,—dentition, adherent prepuce (very common), burns, sores, nasal obstructions, ocular deficiencies, over-loaded colons, and stomachs, presence of intestinal parasites, lumbricoids, pin worms, thread worms, etc., stomachic and intestinal indigestions. In these indigestions, however, I think the cause is not so much reflex as conditions of auto-intoxication which factor was overlooked by the older writers. These should be classed under the following heads:

5. Convulsions due to organic and inorganic poisons, such as ptomaines, toxines, uræmia, lead, and other metallic salts. In this class we might well put the convulsions of the infectious diseases.

6. Convulsions from exhausting diseases, and anything that lowers vitality, lessens development, interferes with

proper nutrition and assimilation, rickets, scrofula, rheumatism, severe loss of blood, the hyperæmic condition of the cortex explaining the relative frequency of convulsions in rickets.

7. Convulsions may sometimes be idiopathic or hereditary. While the convulsion is not inherited *per se*, there is, as we all know, an inherited susceptibility of the nervous system to the various nervous disturbances—a neurotic tendency. It is not uncommon to find frequent convulsive seizures in a child for which no assignable cause can be given except that it has been for generations a “family trait.”

Convulsions may occur after traumatic injuries as an expression of shock.

Of the predisposing causes we can easily see that age is the most important factor,—the great majority being in children under two years of age, as we can readily understand from the physiological difference of the brain at this period. If convulsions occur with any frequency after three years of age we then look to its being epilepsy. It is ever of the utmost importance to determine if an eclamptic seizure is a simple convulsion or the beginning of epilepsy. While I do not believe that convulsions hold any causal relation to epilepsy, yet there is always in a child over two years of age having frequent convulsive seizures enough to make us watch each case with care, and be cautious and reserved in our prognosis.

CONVULSIONS.

Attacks irregular, infrequent. Generally an assignable cause can be found.

Occur always under three years of age.

Attacks prolonged, lasting for an hour or two without intermission. Tongue seldom bitten.

Loss of consciousness ordinarily slow, warned by fretfulness and twitchings of muscles.

EPILEPSY.

Somewhat regular, more frequent, without assignable cause.

Occur after three years of age. Gowers, in 1,450 cases of epilepsy, found 180 cases occurring as frequent eclamptic attacks before three years.

Rarely lasting more than ten or fifteen minutes. Biting of the tongue and bloody froth from the mouth.

Loss of consciousness very sudden. Warning, none, or of short duration.

It is also of great importance to diagnose between reflex convulsions, which are ever functional in character, and those of organic cerebral origin. The following table will render this differentiation fairly easy and reliable.

REFLEX.

Occurring in healthy and robust children.

Beginning of acute infectious disease.

Convulsions general. No remaining paralysis.

Squint, or inequality of pupils, never seen in true eclampsia.

Consciousness recovered quickly after attack has passed off. Convulsions not remaining over a few hours.

Beginning of the exanthemata.

ORGANIC.

Under-nourished, weakly, and wasted children.

Late in acute infectious disease.

Convulsions partial and limited to one side of the body.

Paralysis of face or limbs remaining—ptosis oftentimes.

Squint or inequality of pupils often occurring.

Signs of continued dullness and persistent stupor point to a cerebral lesion.

End of exanthemata.

After the differential diagnosis has been, if possible, made out, we may then arrive at a reasonably accurate prognosis. In estimating the importance of this symptom we must consider the age of the child, nature and severity of the attack, and the probable cause which produced it. Reflex convulsions—which are always symptomatic—rarely offer serious danger to the child's life. In extremely young infants they are oftentimes fatal. Those that occur from imperfect aeration of the blood, as in pertusses, are oftentimes fatal.

These little ones dying from laryngismus stridulus die of spasms of the muscles of the larynx, even of all the respiratory muscles—I have seen several such deaths in my own practice.

Again where the convulsions are so severe, and of such a character as to leave no doubt in the practitioner's mind but that there is grave cerebral trouble, the child will recover with no subsequent impairment. I have seen several cases of this character. Just to the point, I saw in consultation with Dr. Drake, some years ago, a child aged two years, who had no fever, no signs of meningeal trouble, yet had severe spasms every half hour (with more or less spasmodic twitchings in the intervals) for forty-eight hours, the twitching continuing for more than a week after true convulsions ended. Child made a quick recovery, bright and sound physically and mentally.

On the other hand, cases that I have given the most favorable prognosis have died, which only shows our prognosis should always be guarded.

TREATMENT.

The treatment of this trouble is naturally divided into two lines: First, the treatment of the paroxysm, the initiative symptom; and, second, that treatment appertaining to the systemic condition of which the paroxysm is only a symptom.

When called to see an attack of convulsions the practitioner should lose no time in questioning the attendants—being compelled to treat an attack symptomatically in ignorance of its true cause. The child should at once be put in a hot bath (90° to 97°) with cold cloths to its head. A strong child may stay in the bath ten to twenty minutes, a delicate child from two to five minutes. This is a time honored custom that few practitioners would have the temerity not to observe. Bowels should be at once unloaded by a large enema. If overloaded stomach is suspected, give *vin ipecac*, or *alum* and *molasses*, etc., etc.

The child should just now be placed on a cot or bed, and if convulsions continue ether or chloroform may be given tentatively to relieve symptoms until other systemic medications can be employed. The chief of these are bromides and chloral hydrate. If the child can swallow, from two to five grains bromide of potassium or bromide of sodium with from one to two grains chloral every fifteen to thirty minutes for four to six hours at one or two years should be given. If the child cannot swallow, double this amount can be given by

the rectum. The use of chloral by rectal injection is one of the most efficient means of checking the paroxysm. While opium is of great value in controlling nervous excitement and even convulsions itself, it should, as you well know, be given guardedly.

It would be unwise to give opium in great congestion of the brain or in coma. It is best administered by hypodermics in form of morphine, in 1-20 to 1-60 grain doses. Some authors administer opium in the form of deodorized tincture or paregoric. Nitrite of amyl is highly recommended in certain forms of convulsions given either by the mouth in $\frac{1}{2}$ -drop doses, or by inhalation. It acts, doubtless, by depressing the functional activity of the reflex motor centres. Constitutional treatment should at once be instituted in cases due to systemic conditions, rickets, etc. Musk, valerian, asafetida are sometimes useful adjuncts in our treatment.

In laryngismus stridulus a somewhat different treatment is essential. The child, instead of being kept quiet, must be continually moved in position, body kept erect, child slapped and shaken. Ice or ether sprayed over the larynx. Ice introduced into the rectum has been suggested. Hot water to throat, tickling fauces, etc., etc., releasing the epiglottis by finger, apomorphine hypodermatically, nitrite of amyl.

To prevent recurrence of attacks, it is of the utmost importance that we now look for the cause, and whenever possible remove it. To give the treatment for the various causative factors, when found, is beyond the scope of this paper.

DISCUSSION.

Dr. C. G. LUCAS: The general practitioner sees a great many cases of convulsions in children, particularly of the reflex variety. I have always made it a rule, when called to see a child with convulsions, to make a thorough examination, even inspecting the prepuce of the male, to ascertain, if possible, the cause. The majority of cases of convulsions in children that I have seen have been in scarlet fever. I have seen quite a number of cases also following attacks of diphtheria.

A remedy that Dr. Ouchterlony, of this city, has made use of frequently in the treatment of convulsions in children is

rectal injections of milk of asafetida. I make it a rule to always unload the bowel the first thing.

Dr. P. F. BARBOUR: The causes of convulsions vary somewhat with the age of the child. In a child under six months of age we nearly always find the convulsions due to some cerebral cause or a marked reflex. In an infant between six months and two years of age, the predisposition is almost always rachitic, though improper food by itself is sufficient to cause an explosion of the brain centers. After two years of age the convulsions are usually either meningeal or epileptic. This is only a working rule, but it will often prove serviceable.

I wish to speak with a little more emphasis of the significance of convulsions appearing at the beginning of acute infectious diseases, or some days after the onset of these diseases. Most children will develop convulsions if the temperature rises sufficiently high and with sufficient rapidity. It is rare to meet with convulsions in typhoid fever. The rise in temperature is gradual, and the nervous system has time to adapt itself to it; the reflexes are not disturbed so suddenly. When there is a sudden rise of temperature, and if it reaches a sufficient height the child is almost certain to have convulsions.

I have not seen convulsions occurring in uncomplicated measles, but have often seen them in scarlet fever. The temperature of measles does not usually run high enough to produce convulsions, but we may always expect convulsions at the onset of scarlet fever; one may also occur at the onset of pneumonia, or of a malarial paroxysm when the temperature runs high. When a convulsion occurs three or four days after the onset of scarlet fever or diphtheria, it is generally due to nephritis or beginning uremia, so that the significance or prognosis of convulsions occurring in these diseases depends upon the time.

As to treatment: I do not believe anything can be added to Dr. Boggess' paper. If chloroform is at hand, it is the best thing that can be used; if we have not chloroform, hot water is probably the next best thing.

I have not been so unfortunate as to see a death from laryngismus stridulus in the child. We see mild forms of

laryngismus stridulus with spells of holding the breath, or "internal spasms" as it is termed by the laity. In the cases I have seen, simple measures have always been sufficient to cause relaxation.

Dr. JAMES B. BULLITT: I would like to have the last speaker elucidate the subject of laryngismus stridulus further and explain exactly what the mechanism of death is in these cases. Some time ago I put the query to him as to the difference between laryngismus stridulus and spasmodic croup. I was laboring under the impression at that time that they were synonymous. Few cases die of spasmodic croup, and I would like to know if it is not a fact that many of those who die of laryngismus stridulus do so not so much from spasm of the glottis as the term would indicate, but really from acute edema?

Concerning treatment of convulsions in children: I have often wondered if the general anesthetic which the gentlemen have spoken of so highly was not really of more benefit to the parents and the old ladies in the room than the child itself. Knowing what we do of general anesthetics, knowing as we do that they cause serious mechanical disturbances in the body, are they not contraindicated in these cases? While they do tend, for the time being at least, to reduce or do away with the spasm (convulsion), do they not at the same time tend to add to the systemic condition which is the prime cause of the convulsion? In other words, whether the convulsion be reflex or systemic, is it not the presence in the circulating media of the child of a certain substance which should, properly, not be there which produces such manifestations, and do we not by administering ether or chloroform increase such morbid material rather than assist in releasing it from the system?

Dr. H. N. LEAVELL: I have seen a great many cases of convulsions in children, and was surprised to hear the essayist state that we should treat this condition as a disease and not as a symptom which it really is.

Our treatment should be directed towards relieving the constitutional condition which gives rise to the convulsion rather than to the relief of the paroxysm itself. It is distressing to go into a house and see the family worked up and ex-

cited over a case of this kind, worrying the child as well as themselves and the physician. I believe the application of heat will do more towards relieving the condition and bring about a better circulation than will the administration of a general anesthetic.

I have used a combination in the convulsions of children which has acted well in all the cases in which I have tried it, a combination to empty the bowel and to tone down the nervous system, reducing the fever at the same time, and that is calomel and phenacetine. I have seen many cases relieved in this way. Phenacetine seems to reduce fever and control the nervous system, while calomel causes a free emptying of the intestinal tract.

Dr. THOS. BUTLER: I was surprised to hear Dr. Barbour say that convulsions in children between the ages of six months and two years were nearly always rachitic in character. I think he is mistaken in this? The majority of cases of convulsions I have seen in children were between the ages of six months and two years, and I do not remember that any of them were rachitic.

I think Dr. Bullitt is right about chloroform in these cases: It is questionable whether the child dies from spasm of the glottis or larynx or whether it dies from the chloroform.

Dr. WALTER F. BOGGESS: Dr. Lucas says that most of the cases of convulsions he has seen in children have been in scarlet fever. We will admit they are oftentimes seen in children from four to ten years of age with scarlet fever, but they are then always uremic in character. You may test the urine today and find no signs of nephritis, and tomorrow the child may die of uremic convulsions. This condition may come on before albumen will appear in the urine. The kidney suddenly ceases to excrete the toxins and the child suffers from poisoning at once.

In regard to Dr. Barbour's statement that he has never seen convulsions during an attack of measles: I have seen this in two cases, both were of meningeal origin, and both children died of meningitis, which was a complication of the measles.

Convulsions occurring late in the exanthemata are always indicative of meningeal trouble.

Laryngismus stridulus and spasmodic croup: I have always made a distinction between these two affections. In spasmodic croup we have a catarrhal condition of the larynx; the child takes a little "cold" perhaps in the afternoon, he develops a cough which is slightly "croupy," there is irritation of the mucous membrane of the larynx without any excessive exudate, the child goes to bed and wakes up about eight o'clock with a well-marked attack of croup. Of course, laryngismus stridulous may come on with an attack of spasmodic croup, but laryngismus stridulous may occur suddenly in a child seemingly healthy, and particularly in rheumatic children, without any evidence of catarrh of the larynx. It is a spasm of the glottis or the epiglottis. Sometimes the epiglottis shuts down over the opening and remains there, and there are numbers of cases reported where they have been entirely relieved by inserting the finger and pulling the epiglottis up. In spasmodic croup there is always present a dry catarrhal laryngitis.

As to anesthetics: They are given only to relieve the temporary spasm, which you will admit demands relief, and not with the idea of curing the systemic condition which brought about the convulsion. In the cases reported having many convulsions within two or three days without any assignable cause, without any evidence of meningeal, cortical, or cerebral trouble, chloroform seems to be an actual necessity. We give chloroform in such cases, however, recognizing that we are not doing the child much good, but it is necessary in order to relieve the convulsion so that we may resort to other treatment. In children, the subject of convulsions, it seems that the cortical centres are hypersensitive, impregnated with nerve force, and after the convulsion is over the centres become quiet and then you have time to find the cause of the convulsion and endeavor to relieve it.

In the majority of cases I believe convulsions result from the overfeeding of children, an overloading of the bowel, overdistension of the colon. A free evacuation will often bring about relief.

Dr. Leavell will remember that in the paper I stated that a convulsion was not a disease, *per se*, but merely a symp-

tom, but this symptom demands prompt relief, and we do not have time to look for the etiology and pathology until after the spasm has been relieved, therefore, we are justified in treating the condition of a clinical disease only.

Answering Doctor Frazier's question as to the age of children in which convulsions occur most frequently: As the majority of convulsions that we see are due to overfeeding, we find them most often in children between the ages of eight months and two years, or the time mothers begin to feed their children. We may safely say that eighty or ninety per cent. of all convulsions in children occur between eight or nine months and two years. Dentition has been mentioned as a cause: I do not believe simply the pain about the gums is sufficient to cause convulsions, I think you will always find a little fever in difficult dentition of infants, and you have sooner or later more or less gastric or gastro-intestinal catarrh, so that the cause of the convulsions may be found more frequently in the stomach or intestine than in the gums.

As to the use of apomorphine in the treatment of this condition: Even if you do not get vomiting you get what you want, viz.: relaxation, and it takes but a small amount of apomorphine to relax even in an adult. Whether you get emesis or not, it relaxes the system at once and thus the desired result is produced. Tartar emetic is also a good remedy.



DIPHTHERITIC PARALYSIS.

FROM A CLINICAL AND THERAPEUTIC STANDPOINT.

By FRANCIS HUBER, M.D.,
New York.

PARALYSIS caused by multiple neuritis may follow scarlet fever, typhoid, measles, malaria, and other infectious diseases in children. Less frequently, the trouble depends upon the poisonous action of alcohol, lead, or arsenic. In the majority of cases the condition must be attributed to the toxic effects of the products of the Klebs-Loeffler bacilli. As it occurs in from 10 to 25 per cent. of cases, varying in different epidemics, it is justly regarded as one of the most important of the sequelæ of diphtheria.

The treatment of the original disease, by antitoxin or otherwise, does not appear to have any influence upon the subsequent development, nor does the type, mild or severe, determine its occurrence in any way. In fact diphtheria is often mild in character, the slight throat trouble disappears quickly, and the case does not come under observation until some change in the voice, difficulty in swallowing, etc., induce the parents to seek medical advice.

The difficulty in deglutition and the return of fluids through the nose, occurring during the first week, due to mechanical interference with the functions of the velum by the membrane or edema, must not be confounded with the real diphtheritic paralysis. The latter, though it may occur as early as the seventh or eighth day, generally manifests itself during convalescence in the second or third week from the onset of the diphtheria.

In some patients the progressive muscular weakness of the body, though no paralysis exist, and anemia frequently associated with debility, attract attention. Upon examination paralysis of the soft palate may be found, with loss of patella tendon reflex.

The absence of the patella reflex, observed early in the course or during the progress of the disease, may be the only evidence of an implication of the nervous system; generally it

is associated with paralytic manifestations. Some authorities consider it of prognostic value (fearing sudden death from heart paralysis) and refuse to allow such patients to sit up or to make any exertion as long as the reflex is absent.

The paralysis is the result of a toxic peripheral neuritis—a parenchymatous degeneration of the nerves and not of central origin. It may be well in this connection to refer briefly to some animal experiments, elucidating some of the obscure nervous symptoms. The recent researches of Luisado and Pacchioni give substantially the following: The direct application of the toxine to the nervous system causes a degeneration and inflammatory action, starting at the site of application and propagated to a greater or less extent from that point on. If the dogs were not immune and a toxic dose was given, local reaction occurred. The toxins affect the nerve fibres (the myelin, principally, more than the other portions of the nervous system. The sheaths are first attacked, then the nerves, and later the nerve centres in the medulla.

In the February number of PEDIATRICS, an interesting article on "The Pathology of Diphtheritic Paralysis," appeared. In this excellent and valuable paper, which will repay careful reading, Batten presents a digest and summary of the literature in addition to a detailed microscopical report of careful investigations conducted in six cases. In concluding, he writes: "It is probable that the dominant lesions in diphtheritic paralysis is a parenchymatous degeneration of the myelin sheath of the nerves, and that this degeneration affects both motor and sensory fibres alike."

And now for the practical side of the question. The picture varies with the nerves affected; and may be local or general in character. Ordinarily the soft palate is first attacked, the nasal twang to the voice, perhaps regurgitation of fluid through the nose, and some difficulty in deglutition are observed.

If the constrictors of the pharynx are involved, the difficulty is increased, food enters the larynx, and a spasmodic cough results, somewhat croupy in character, directing attention to the accident and its dangers.

Many of these patients, unless the trouble is recognized and energetically treated, die of an aspiration pneumonia. Upon inspection of the throat the soft palate appears relaxed

and immovable, with diminished sensibility and absence of reflex.

This may be the only manifestation, or a general neuritis may be present. The extrinsic and intrinsic muscles of the eyeball are next involved—squint, ptosis, and loss of power of accommodation is observed. Facial paralysis is reported to have occurred, but must be rare. It should not be confounded with the palsy, that sometimes follows a complicating middle ear disease.

The paralysis may be confined to one limb, commonly both arms and legs are affected, or paraplegia may result. The head falling back may be due to weakness or paralysis of the muscles of the neck.

Frequently there is a weakness of the lower extremities, and sometimes general muscular incompetency, but no real paralysis, with absence of tendon reflex. The latter may occur with or without paralysis in other parts of the body. It has been observed early in the disease without subsequent loss of power in any muscle.

The danger is extreme when the respiratory muscles or heart are implicated. In all cases, even those mild in character, the heart should be carefully watched. In some instances the pulse is very slow and soft, in others there is great frequency, the two conditions may alternate, and now and then the pulse is irregular.

Heart failure may be rapid and more or less sudden, or come on slowly. Fatal syncope may occur at any time during the onset of the disease, at the height of the affection, or subsequently during convalescence. Palor, weakness, and fainting spells, with a variable pulse, are danger signals not to be disregarded. Patients must not be permitted to exert themselves in any way. Above all they should be cautioned against assuming the upright position. The utmost care should be observed to keep them absolutely at rest, physically and mentally.

In some cases, with or without warning, collapse may set in and result fatally in a few hours. It is sometimes sudden and unexpected, and not at all infrequent in the early stage. The usual form makes its appearance during convalescence, at a time when all danger is apparently over.

The accident may be the result of an infectious myocardi-

tis or neuritis of the cardiac nerves, and sometimes it must be attributed to thrombosis or embolism. When the muscles of respiration are implicated there is added danger of death from apnœa. Vaso-motor disturbances are evident in the disturbed rhythm of the heart's action, mottled appearance of the capillary circulation with cold extremities, etc.

The bladder and rectum usually escape. In rare cases ataxia has been observed. Post-diphtheritic paralysis of cerebral origin, giving rise to hemiplegia, is extremely rare, and yields a very unfavorable prognosis. Among some 40 cases reported, 6 recovered completely, 7 died, permanent paralysis of greater or less extent persisted in the others. The cause was attributed to hemorrhage in 7, embolism in 14, softening in lenticular nucleus in 1, uncertain in the others.

Post diphtheritic chorea is reported now and then. Its rarity justifies the suspicion that it may be a mere coincidence and not a true sequel of the infectious disease now under consideration.

Sensory paralysis may occur and present itself in the form of anesthesia, amaurosis, or deafness. We should not forget that the amaurosis may be due to existing nephritis, therefore in making the diagnosis, a possible renal complication should be excluded.

The different degrees of paralysis encountered during the attack, or subsequently in the convalescent stage, are evidences of the toxic effects of the poison upon the nervous system. If the cases are carefully watched the prognosis is not as grave as one would infer from the condition in which many of the patients are found. A large number run a favorable course in from four to ten weeks.

Treatment. Absolute rest should be insisted upon, the patient kept in a well ventilated room, the usual hygienic and sanitary measures carried out. Should it be considered advisable to take the little patient up or out, great care should be observed, and the upright position assumed very gradually.

The general condition must be improved by good food, good air, tonics, particularly iron in a digestible form. The remedy *par excellence* is strychnia, which should be given in full doses, per mouth, or, in severe cases, hypodermically. Recently, in a bad case, a child 30 months old, strychnia nitrate gr. $\frac{1}{50}$ was administered hypodermically twice a day

for two weeks, and subsequently once a day for some weeks longer, with excellent results. Under ordinary circumstances and in mild cases, the remedy may be given by mouth in divided doses three times a day. The strychnia should be given subcutaneously when the constrictors of the pharynx are involved, when the heart or respiration shows the toxic effects of the diphtheritic poison, or when the muscular incompetency is pronounced.

Nutrition should not be neglected. If there be much difficulty in swallowing, in consequence of paralysis of the pharyngeal constrictors, the various devices practiced in feeding after intubation may be advantageously resorted to. In such cases, strychnia given hypodermically, in the cervical and clavicular regions, two and three times daily, causes a decided improvement in the symptoms within forty-eight hours. Careful massage of the extremities will improve the cutaneous circulation, and the condition of the muscles. If respiration is endangered, electricity, used with judgment and intelligence, must be employed in addition to artificial respiration, rhythmic traction of the tongue, and the subcutaneous administration of strychnia.

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TYPES OF CHILDREN IN GERMANY.

By ARTHUR MACDONALD,
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OUT of 6,758,827 school children in Germany¹ Virchow finds, as shown in Table I, that more than half of the children belong to the mixed type, but more than two-thirds of the rest belong to the blond type:

TABLE I.

Type.	Number of children.	Per cent.
Blonde.....	2,149,027	31.80
Brunette.....	949,822	14.05
Mixed.....	3,659,978	54.15
Total.....	6,758,827	100.00

Considering the different colors of hair, as shown in Table 2, we see more than two-thirds of the children have blonde hair:

TABLE II.

Color of hair.	Number of children.	Per cent.
Blonde hair.....	4,617,546	68.02
Brown hair.....	1,988,966	29.42
Black hair.....	133,864	1.98
Red hair.....	17,499	.25

COLOR OF EYES, HAIR AND SKIN OF CHILDREN IN GERMANY.

White children with blue eyes are the most frequent; they are about one-half as frequent as children with blonde hair. Brown eyes constitute the smallest number—not over a fourth of the whole number.

TABLE III.

Color of eyes.	Number of children.	Per cent.
Blue eyes.....	2,673,539	39.55
Brown eyes.....	1,839,214	27.21
Gray eyes.....	2,242,702	33.18

As to the color of the skin we find the percentage of white and brown skin as given in Table 4.

TABLE IV.

Color of skin.	Number of children.	Per cent.
White skin.....	6,184,406	91.50
Brown skin.....	571,628	8.45

¹ Virchow, Arch. f. Anthropol, Bd. XVI., S. 275-475, 1885-86.

The majority of those with black hair have a brown skin (Table 5).

As we go west and south in Germany the number of blondes lessens. They are the most frequent in the north.

If we take the officials of Germany, who belong to the well-to-do classes, we find the largest number of blondes, being 40 or more per cent., among their children. In the North Friesian Islands the percentage of blondes is 52.81.

Among the children of the government officials, or the well-to-do classes, less than 10 per cent. are brunettes.

In general, there is a relatively greater number of blondes in the country than in the city.

In the mixed type blue eyes are the most influenced.

One-third of all the German school children have gray eyes. Another fact is that blonde hair prevails in the mixed combinations, reaching an average of 36.41 per cent.

Those with brown hair, who are not brunettes, are a branch of the brunettes rather than of the blondes. The hair of women seems to turn dark faster than that of men.

TABLE V.—Percentages.

	Blue eyes, blonde hair, white skin.	Blue eyes, brown hair, white skin.	Blue eyes, brown hair, brown skin.	Gray eyes, blonde hair, white skin.	Gray eyes, brown hair, white skin.	Gray eyes, brown hair, brown skin.	Gray eyes, black hair, brown skin.	Brown eyes, blonde hair, white skin.
	1	2	3	4	5	6	7	8
Germany	31.80	6.20	1.41	23.41	7.05	1.91	0.66	13.00
North Friesian Islands.....	52.81	6.50	.89	23.22	3.33	.59	.13	6.37
Prussia, 4,127,766 persons...								
From 6 to 8 years of age..	35.04	5.38	1.00	25.32	5.47	1.28	.37	14.56
Over 8 to 10 years of age..	38.33	6.13	1.34	23.79	6.13	1.65	.46	12.49
Over 10 to 12 years of age..	34.39	6.48	1.25	24.19	6.73	1.61	.44	11.99
Over 12 to 14 years of age..	31.89	5.96	1.00	25.57	7.37	1.44	.37	11.74
To 14 years of age.....	38.59	6.11	1.27	24.09	6.20	1.58	.45	12.65
Over 14 years of age.....	26.25	6.32	1.05	24.43	9.63	1.91	.58	10.19

	Brown eyes, brown hair, white skin.	Brown eyes, brown hair, brown skin.	Brown eyes, black hair, brown skin.	Blue eyes, red hair, white skin.	Gray eyes, red hair, white skin.	Brown eyes, red hair, white skin.	Other combinations.	Whole number
	9	10	11	12	13	14	15	
Germany	9.70	3.14	1.21	0.10	0.07	0.06	0.28	6,758,827
North Friesian Islands.....	3.29	.93	.55	.46	.09	.....	.84	2,369
Prussia, 4,127,766 persons...								
From 6 to 8 years of age..	8.32	2.18	.58	.12	.10	.08	.20	546,949
Over 8 to 10 years of age..	8.02	2.47	.73	.11	.08	.06	.21	2,156,025
Over 10 to 12 years of age..	8.88	2.59	.84	.13	.11	.07	.30	692,839
Over 12 to 14 years of age..	10.42	2.69	.91	.13	.11	.07	.33	190,583
To 14 years of age.....	8.34	2.45	.75	.12	.09	.07	.24	4,070,923
Over 14 years of age.....	13.01	3.69	1.73	.08	.09	.09	.98	56,843

From an examination of Table 5 it will be seen that the darkening of the hair is very slight in the pure brown type,

and in the mixed form with gray eyes it hardly appears, at least during school days. But darkening of the hair is very frequent in the pure blonde type, where it reaches the highest per cent.

HAIR OF OTHER NATIONALITIES COMPARED WITH HAIR OF GERMANS.

In comparing the results of observations of school children of other nations the following table is made from Virchow's data. A striking feature is the small number of blondes in Switzerland. This may be due to the fact (Virchow) that the country districts were not studied.

TABLE VI.

Country.	Number of school children.	Blondes.	Brunettes.	Blonde hair.	Brown and black hair.
		<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
Germany.....	6,758,827	31.80	14.05		
Belgium.....	608,698		27.50		
Switzerland.....	405,609	11.10	25.70		
Austria.....	2,304,501	19.79	23.17	44.99	54.84
Total.....	10,077,635				

LONG HEAD AND BROAD HEAD.

About all European peoples show two different forms of head, a long and small and a short and broad head. Formerly in Germany the long head prevailed, being called the Germanic type, but in recent times short, broad heads have increased, till now they constitute the largest number.

RELATION OF COLOR OF SKIN, HAIR AND EYES.

The color of the skin, which stands in a certain relation with color of hair and eyes, is an important characteristic for distinguishing races; but in Germany, as in other European countries, there is no uniform relation. Blonde and brown people follow one another in most places, and to-day only a few peoples are wholly blonde. It seems as if brunettes were increasing daily. According to Virchow, if it could be shown that the long-headed people were blonde and light colored, and the short-headed brunette and dark colored, the course of the mixture and the spread of different peoples (also in pre-historic terms) would present valuable information.

There is in typical individuals of a race a more or less constant relation between the colors of the skin, hair and eyes. Frequently all are dark, often they are all light.

Virchow assumes that since there was never a dark race with light hair, although originally blonde hair can become in adult age dark, that those persons who between the ages of 6

and 14 have blonde hair should be considered as belonging to a blonde race. There is no race of which the skin, hair, or iris is wholly without pigment. Albinism is a pathological condition. No definite lines can be drawn dividing blondes from brunettes. Every individual has a tendency to a darker shade.

The majority of children are born with blue eyes, but with very many the blue soon changes into a brown. This change begins in the first week in life; after two years the permanent color is in most cases determined.

The change of color in the hair is much slower. The majority of children have blonde hair at birth. It becomes dark gradually, sometimes not till after puberty. The same is generally true of the skin, only the darkening process extends further into later life. In white races elderly people always have a more colored skin than young people; the difference is more of quantity than quality.

Since there is a certain parallelism in the color of skin, hair and eyes, persons with blue eyes, blond hair and white skin are called "blondes," those with brown eyes, brown hair and brown skin "brunettes." But there is a large number of combinations of less significance. The white races especially show great individual variability in combinations. In making these divisions individuals are generally taken between the ages of 20 and 25.

The general results of the investigation in the schools of Germany are confirmed by similar studies in Austria, Belgium and Switzerland. The number of children is so great (over 10,000,000) that these results must be considered as fairly well established.

Those interested in the study of children, in general, will find additional facts in a work entitled: "Experimental Study of Children" (by the writer), to be published by the U. S. Bureau of Education, Washington, D.C.

EDITORIAL COMMENTS

Cholera Infantum and Its Classification

The summer is coming upon us with rapid strides, bringing in its train the diseases and complaints incidental to that season. Foremost, and most deadly amongst these, so far as very young children are concerned, are the diarrheas peculiar to hot weather. It would be a trite remark to make that the mortality from this cause is awful. The fact that thousands of infants are with each recurring summer swept away by this fell disease is too well known to require any dwelling upon. But there is one phase of the matter of which it appears but very little notice has been taken, that in spite of the progress effected in public hygiene, and especially as regards the quality of the water supply of large cities, the death rate among infants from summer diarrhea has suffered no appreciable check. This, at least, goes to show that water exerts a very inconsiderable effect on the rise or fall of this disease. Mr. Langford Spues, referring to this feature of the case, says: It has long been thought that the filth and putrefaction of towns, animal exhalations with atmospheric changes "caused this summer diarrhea" amongst children. Dr. J. B. Russell has greatly aided us by his investigations and statistics in Glasgow of deaths occurring from this disorder. He finds that the death rate from diarrhea of children, under five years of age, is now (1890-94) exactly what it was thirty years ago. While the death rate, at the age of five years and upwards, is less by more than one-half. "Improved water supply in Glasgow, therefore, has not influenced the infantile diarrheas, although it has lessened by half those occurring over five years of age. In fact the water-drinking children have been saved, while the milk-fed children still die in large numbers. The classification of infantile diarrheas is a decidedly complex question, and quite a long string of terms are applied to what is claimed to be different forms of the disease by some physicians. Upon this point, Dr. Langford

Symes has this to say: "The subject of classifying diarrhea has for generations greatly perplexed medical observers. It would appear now that as we are getting a little more light thrown upon these disorders, they will become more simplified. A strictly anatomical classification is impossible. Those who have had most experience have failed to arrive at one, because there is no relation in any case of diarrhea between the severity of the symptoms and the changes found after death. Many forms are described, but there is no morbid anatomy to correspond. The severest symptoms and the most fatal cases, frequently exhibit the fewest post mortem lesions (as in cholera); while a child, who during life has had but little diarrhea, may reveal the most intense structural mischief." Therefore Mr. Symes judges it sufficiently comprehensive to discuss diarrheas under two heads only, dyspeptic and infective. As to the diarrheas that attack infants only in hot weather, the majority of observers term it indifferently cholera infantum, or summer diarrhea. Dr. Victor Vaughan, however, prefers to denominate the severer cases acute milk infection, and the milder sub-acute milk infection, defending his position on the ground that all, or very nearly all summer diarrheas are due to contaminated milk. Booker distinguishes three forms of diarrheal diseases: 1st, dyspeptic diarrhea, with no inflammation, with no leucocytes, or epithelia in the lumpy acid stools, with plenty of bacteria coli communis, and few specimens of lactis aërogenes. This is sometimes an independent form, but at other times the first stage of (second) the streptococcic gastroenteritis. This has the character of a general infection, the intestines are ulcerated or suppurating. The stools contain mucus, leucocytes and streptococci. These are sometimes very numerous, in some instances mixed with bacteria coli communis. When cocci are prevalent, the cases are very obstinate and fatal. Booker's third form is a bacillary gastroenteritis. It exhibits less local inflammation than intense toxemia. A great many varieties of bacilli are found, with or without streptococci.

Not one of these classes, however, is claimed as a clinical or pathological entity. On the contrary, transitions between them are pronounced to be very frequent. There would appear to be no especial reason why the names cholera infantum, or summer complaint, so long applied to this class of disease in infants should be altered. However, this is more or less a matter of individual taste.

**The Etiology of Cholera
Infantum**

What, then, is the cause of cholera infantum? It will be instructive to briefly review the opinions on the subject of a few of those observers who have shown themselves by their skill and experience best fitted to speak authoritatively. All are agreed that improper feeding plays the chief part in the causation of the summer diarrhea of infants, though on this point some hold more positive views than others. Dr. Jacobi says in the "Twentieth Century Practice of Medicine": "The patients are less than two years old. In the vast majority the feeding is artificial, and with but few exceptions the attacks occur during the hot months of the year. Constant heat is undoubtedly a prominent etiological factor. Dr. Jacobi is also of the opinion that heat has a direct influence in causing cholera infantum, agreeing with Clarke, Miller and Meinert, who pointed out the striking resemblance between the disease and sunstroke. Dr. Victor Vaughan says that cholera infantum, or, as he prefers to term the disease, acute milk affection, never occurs save in the hot months, but denies that there is any close connection between it and sunstroke. Dr. Vaughan also contends that every case of this affection is one of poisoning from the elaboration of chemical products by the growth of bacteria in milk. Dr. Ashby, of Manchester, says: "It is tolerably certain that not one special bacillus, but many, are capable by their growth of forming toxins, which are of a highly deleterious character. Having found entrance into the alimentary canal by means of milk or other food, the forma-

tion of toxins and toxalbumins quickly follows, which, being absorbed into the blood, give rise to fever, depression of the heart, suppression of urine, and drowsiness, and affect all the tissues of the body. Locally, the toxalbumins are apt to give rise to an enteritis, which chiefly affects the large bowel and lower end of the ileum, the reason doubtless being that in these parts the toxalbumins are longer in contact with the living membrane of the bowel than they are in the upper part of the alimentary tract. Dr. Ballard, in his supplement to the Report of the Local Government Board of England, in 1897, concluded that: (1) Summer diarrrhea mortality closely follows the indications of the four-foot earth thermometer, only commencing definitely when the temperature is over 58° F., and is highest at highest mean weekly reading of this thermometer. (2) It is associated with unsanitary conditions. (3) Fatal diarrrhea is immensely influenced by the food which the infant takes immediately before an attack. (4) In the food the micro-organisms find a nidus and pabulum convenient for their development, that from the food, as from organic matter in the soil, they can manufacture a virulent chemical poison, and that this chemical substance is, in the human body, the material cause of epidemic diarrrhea. It is exceedingly probable that these diarrrheas are due to bacteria in the superficial layers of the earth. In short, it is now freely conceded that cholera infantum is of bacterial origin, while at the same time there is no one specific organism to which the disease can be traced, but a mingling of a few or many, as the case may be. Milk, being the sole food of infants, as well as the most prolific cultivating ground of the harmful micro-organisms, it plainly follows that the disease is chiefly contracted by the agency of infected milk. When this truth is fully grasped, there will be no difficulty in comprehending how it is that the infant fed on artificial foods is almost invariably the victim of summer diarrrhea, and only at this early period of its life. But, although infected milk or artificial food of some kind is in the immense major-

ity of cases the direct cause of infantile summer diarrhea, the opinion is held by many observers, as we have mentioned above, that hot, dry weather plays a very important part in the dissemination of the disease. Dr. E. W. Hope, medical officer of health, of Liverpool, says: "During a wet and cool summer and autumn, mortality from zymotic diarrhea is comparatively small, but a high death rate from this cause is an invariable accompaniment of a warm, dry season. If a series of years be taken, and the average temperature and rainfall carefully compared, the striking connection of warmth and dryness with the mortality from the cause now being dealt with, becomes very clear. Taking the last twenty years, six of them showed an average rainfall from June to September of 13.8 inches. The average number of deaths during the third quarter of each of these years from zymotic diarrhea was 373. Fourteen, however, out of the twenty years, had an average rainfall from June to September of 10.9, and the average number of deaths during the third quarter of each one of these was 573, that is 53 per cent. in excess of the average of periods of high rainfall. To take extremes: in the year 1891, upwards of 16 inches of rain fell from June to September, and 203 deaths occurred from diarrhea during the third quarter of that year. In 1895, however, only 7.7 inches of rain fell from June to September, and the deaths from diarrhea during the third quarter amounted to 819. Last year 8.4 inches of rain fell during third quarter, and the deaths from diarrhea during that period amounted to 1,311." These figures speak for themselves.

Statistics Showing that Cholera
Infantum is Due to Contami-
nated Artificial Food, and
the Means of Prevention

According to Emmett Holt, in 2,000 cases of death amongst children from summer diarrhea, it was proved on investigation that only 3 per cent. were breast-fed, revealing a most extraordinary immunity amongst infants nursed by their mothers. Dr. Niven, of Manchester, published statistics of infant

diarrhea in the summer of 1896 in that city. Out of 500 deaths, only fifteen were being breast-fed when taken ill. The relative chance of dying from diarrhea of hand-fed, as compared with breast-fed children, was as 8 to 1 under 1 month old, 95 to 1 at 1 month, 125 to 1 at 4 months. These figures coincide with those of Dr. Emmett Holt, viz., 97 per cent., while Minert, of Bavaria, finds the rate in his country to be 96 per cent. The treatment of summer diarrhea in infants is much too lengthy a subject to be dealt with in the pages of a journal, more especially as the opinions of various authorities with respect to the most suitable therapeutic remedies differ somewhat widely. Most practical physicians, however, agree that in severe cases lavage is promptly indicated, and it may also be said that, whenever possible, change of air is of the utmost benefit. Indeed, the removal of the little patient from the crowded town to the quiet, healthy country, has frequently an effect almost magical. But when all has been said, there can be no doubt that the aim of medical men should be to endeavor to check, and even to stamp out the disease. The first steps towards this most desirable end should be in the direction of feeding the infant properly, and when breast milk is not procurable, to obtain as near a substitute as is within reach. Referring to this phase of the matter, Dr. Jacobi says: "Cow's milk will always be one of the foods administered at any age. In the country, when the cattle are not tuberculous, and when no diphtheria, scarlatina and typhoid fever can vitiate the milk, it should be given fresh, modified by the addition of barley or oatmeal water. City milk is no longer fresh. . . . Boiling, sterilization or pasteurization is therefore indispensable, partly to destroy the bacterian *aërogenes*, partly to render innocuous such pathogenous germs as may have been admitted during the long time which elapsed between milking and consuming." Dr. Ashby speaking on this point says: "A greater care of the health and cleanliness of the cows, a rapid cooling of the milk to a temperature of 40° F., and main-

tenance of this temperature during the conveyance of the milk from the cow to the consumer, must be reckoned among the most important measures of prophylaxis. After the question of procuring milk in a fit state to be nourishing food for the infant comes the almost as important one of domestic hygiene. In fact these are so inextricably bound together that they may be considered identical. It is of no use to obtain milk free from germs, if after so doing, it is allowed to become contaminated when in the house. Therefore cleanliness is a *sine qua non*, if disease is to be warded off. A proper feeding bottle is also a necessity. Such a one, according to Langford Symes, should have no tubes, no angles, no indentations on glass, a wide mouth. It should be of transparent glass, easily cleansed, about 8 oz. in size, and impossible to be used by the child alone. In the houses of the rich and well-to-do, it is easy to fulfill all the conditions necessary to an effective state of hygiene, but with the poor unfortunately the case is very different. There can be no doubt, however, that even with them matters might be very considerably improved if they were instructed how to proceed to render their homes more healthful. The suggestion has been made, and is, we believe, in force in some cities, that the municipal authorities, or the Health Board should, at the coming of the summer, cause to be distributed amongst the dwellers of the slums, printed notices advising them on some points in regard to domestic hygiene which are within their power to carry out, and which would do much to neutralize the effect of the disease-spreading germs. More careful scavenging, and more scrupulous domestic cleanliness, together with stricter supervision of dairy farms, and of milk as sold in shops are the means at our disposal for combating the summer diarrhea of children. Much can be effected, too, by city authorities, in the way of public parks, bath houses, and by tearing down old unsanitary dwellings, and erecting in their stead buildings well-lighted and ventilated, and supplied with up-to-date hygienic arrangements. It should be a war against dirt, waged by the individual, as well as the body corporate.

SOCIETY REPORTS

BRITISH MEDICAL ASSOCIATION.*

Dr. RORIE, Dundee, in the Chair,

A.—CLINICAL CONGRESS.

A large number of interesting medical and surgical cases were exhibited, of which the following were specially interesting to pediatric physicians.

Dr. BRAMWELL showed a **Case of Lupus** in a girl affected by *Ichthyosis*. Thyroid gland was administered for the *Ichthyosis*, and under this treatment the *Lupus*, which was very extensive and had produced great deformity, especially about the face, had undergone remarkable improvement in the course of ten weeks.

Dr. JAMES CARMICHAEL exhibited (1) a little girl, about 3 years of age, who had been admitted to the Sick Children's Hospital about a year ago, suffering from complete hemiplegia. This had come on a few weeks before admission, during a very severe attack of general convulsions, which lasted altogether for sixteen hours. The child had previously been perfectly healthy. The hemiplegia was almost complete when the patient was admitted, but the motor power soon began to recover, the arm improving more rapidly than the leg. At the present time recovery is almost perfect, there being only a very slight degree of spasticity, with slight exaggeration of the reflexes in the arm and leg. In the treatment of the case, it had been found of great assistance to tie up the sound arm for two hours twice a day, so as to encourage the child to use the other as much as possible.

(2) A little girl, aged $2\frac{1}{2}$ years, suffering from aphasia. Six weeks ago this little child had an attack of convulsions, lasting about an hour. Before the attack she had been a very sharp child and an excellent talker. After the convulsion her

* Combined meeting of Edinburgh (Fife and Lothians), Perthshire, Dundee and District Branches, in *Royal Infirmary*, on Friday, March 17, 1899.

whole manner was altered. She had no paralysis, but had quite lost the power of speech, and returned to her baby ways as if she were only a year old. Now she is again beginning to utter monosyllables.

Dr. MILES exhibited several cases illustrative of abdominal operations. One of these was a boy, about 12 years of age, who had been climbing a tree in the park, when he fell and lighted on the railing surrounding the tree. A spike of the railing entered his abdomen, causing a wound through which the great omentum and part of the small intestine escaped. In this condition the boy walked home, a distance of 220 yards, and was then at once brought to the Infirmary by his mother. Dr. Miles operated, replacing the bowel and removing the omentum, which was very dirty. The boy made an uninterrupted recovery.

Another case was a boy who went for a walk with a friend. His friend volunteered to show him the use of a small pistol, and in doing so shot him exactly through the centre of the umbilicus. The boy was brought to the Infirmary, and when the abdomen was opened it was found that he was suffering from advanced tubercular disease of the peritoneum. In trying to separate the adhesions the intestine ruptured. This rupture and the damage done by the bullet were repaired, but on account of the denseness of the adhesions, the bullet itself could not be discovered. The boy made a good recovery, and now seems in very good health. Possibly the dense tubercular adhesions prevented his being killed by the bullet, and the operation of opening the abdomen prevented his dying of tubercular peritonitis.

Dr. STILES showed (1) a case of **Congenital Dislocation of the Hip**, in a child, four years of age, treated successfully by *Lorenz's* method, a method not sufficiently known in this country. Briefly the method is as follows: Firm extension is made on the affected limb, in the direction of the long axis of the body, and is kept up for ten minutes, or more, until the tip of the great trochanter is on a level with that of the opposite side. Then, with the child lying on the floor, and an assistant steadying the pelvis, the limb is raised to the vertical position, strongly extended; and then very gradually abducted. In a

favorable case the head of the bone can be felt to slip into the acetabulum, but if the limb be replaced in the extended position, the dislocation recurs. Accordingly the limb is put in plaster of Paris in the abducted position, the thigh being at a right angle with the body. This position must be kept up for six to nine weeks. Then and thereafter, at intervals of about four weeks, the plaster bandage is taken off and replaced by another, the flexion and abduction being slightly reduced each time. When the limb has been brought back nearly to the normal position, the child may be allowed to get up, but for a time must wear a high shoe on the sound leg, so as to throw the weight of the body upon the other, and so press the head of the femur into the acetabulum. The little girl shown now has perfect use of her limb, so that no one could discover anything the matter.

(2) A baby, aged six months, with a very large meningocele, which is interesting, not only on account of the size, but because it grows from the vertex. The child is fairly well-grown and nourished.

Dr. JOHN THOMPSON showed an infant suffering from pseudo-edema. The child is six weeks old, and presents on her face, neck, upper limbs, shoulders and back, a state of marked induration of the skin and sub-cutaneous tissue, which closely resembles that in sclerema. The indurated areas are very sharply circumscribed, they are not cold to the touch, as in the true sclerema, the child is not feeble, and her temperature is normal. The induration was first noticed on the cheeks. A number of cases have been published at various times of a similar condition, resembling true sclerema in some respects, but differing from it in the patient being tolerably strong, and having a normal temperature, and in the induration being reddish, instead of pale in color, warm to the touch, and beginning in the upper part of the body. Many of these cases recovered, some of them after mercurial inunction. This child is steadily improving, under the application of ichthyol and rectified spirit (3i in 3ii).

An Exhibition of Histological, Pathological, Bacteriological, and other specimens, was arranged in the Surgical Waiting Room.

Dr. SHERMAN exhibited a number of pathological specimens, prepared by Jore's method, in which the natural colors had been very successfully preserved. (See note).

Mr. H. J. STILES and Dr. ANDREW WATT exhibited a large number of stereoscopic photographs of children (clinical and anatomical), which he finds very useful for teaching purposes.

Mr. STILES also showed a number of specimens, illustrating diseases of children. These included:

(a) Viscera, from a case of lympho-sarcoma, in which the symptoms were indistinguishable from those of tubercular peritonitis.

(b) Multiple fractures from a syphilitic and rachitic infant.

(c) A tubercular hernial sac from a case of abdominal tuberculosis.

(d) Acquired hydrocephalus, the symptoms resembling those of cerebellar tumor.

Dr. FOULIS showed a can for the sterilization of milk for household use on delivery.

NOTE.—The specimens preserved by Jore's method were very much admired, and it may be of interest to describe the method, as recommended by Sherman (*Scottish Medical and Surgical Journal*, March, 1899).

The following powders should be made up:

Sodium chloride.....	700 grs.	(1%)
Magnesium sulphate.....	1400 "	(2%)
Sodium sulphate.....	1400 "	(2%)

The three powders are dissolved in a gallon of tepid water, and $7\frac{1}{2}$ ounces of formalin added (about 5%). Place the organs to be preserved in the above, changing the solution every two days. The time required varies from two days for a kidney, to ten days for the larger organs.

The tissues are now washed in spirit till the color begins to freshen, then are placed in methylated spirit till the color returns distinctly. This generally requires twenty-four hours. Now transfer to equal parts of glycerine and spirit for a week. Finally mount and preserve in

Glycerine.....	2 parts.
Water.....	3 "
Formalin.....	2 oz. to 1 gallon, or $\frac{1}{80}$ part.

PRACTICAL NOTES

A Case of Hypertrophy of the Mamma, on the Diseased Side, in two Cases of Cerebral Infantile Paralysis, Accompanied by Hemiathetosis, was reported by LANNOIS. He believes that the gland was subjected to a continued irritation by contractions of the pectoralis, and thus became enlarged. Leblais has observed a similar case. Bourneville observed an hypertrophy of the testicle on the diseased side, in seven cases, out of twenty boys suffering from heimiplegia; what the cause of this was, he is unable to say. (*Lyon méd.*, 1898, No. 32).

Eczema.—Extract of whortleberry (*Extr. Myrtill.*) was recommended warmly, as we know, by Prof. Winternitz, a number of years ago. Dr. Daxenberger (Regensburg) learned the excellent action of this remedy from him, and employed it in his practice for two years. It acted very favorably in various forms of eczema, especially in children, also in the mycotic forms, in smaller ulcerations of the skin and mucous membrane, rhagades of the angle of the mouth, eyelids, ear-lobes, etc. The remedy (of the consistence of a syrup) is applied by means of a camel's-hair brush, after the diseased surface has been carefully cleansed, and lightly dried. (If we wish to make the upper layer heavier, we may dust over it some powder, so that the skin appears as though covered with a sac); dessication rapidly takes place, and the layer adheres so tightly that a dressing becomes unnecessary, unless the first covering becomes cracked. In this manner an eczema was often cured within 24 to 48 hours. In urticaria and herpes zoster, this remedy exerted a markedly soothing effect. Internally it proved most useful in intestinal catarrh (acute or chronic), especially in children, in coffee-spoonful doses, as an addition to drinks, tea for example.—(*Centrblatt für Kinderheilkunde*, 1898, iii., 439). *Aerztl. Rundschau*, 1898, No. 34.

The Question of the Erythema Rashes Occurring in Infectious Diseases was discussed by CHANTEMESSE. The appearance of an erythema, after the injection of antitoxine, is at the present time, as is well known, attributed in part to the serum itself, and by other authors to the presence of streptococci, complicating the diphtheria. The question may be best studied in an infectious

disease, in which the streptococcus in pure culture is present, from the beginning to the end, and this disease is erysipelas. Out of 579 cases of erysipelas, which were given no other treatment except cold baths, 28=5.24% presented an erythema, during the course or at the end of the disease. In cases of facial erysipelas, erythemata occurred more rarely (in 558 cases, 22 times=4%). On the other hand, erysipelas of the extremities yielded a much greater number of erythemata (in 24 cases, 6=25%). The erythema makes its appearance, especially in grave forms, between the second and ninth day of the disease, occasionally on the eleventh and twelfth day. In one case, the erythema even made its appearance after recovery from the erysipelas, twenty-eight days after the beginning of the disease. The forms of erythema here under consideration are: Erythema simplex, purpuric and polymorphous erythema. The former is, as a rule, benign, makes its appearance early, usually on the back, chest and the abdomen, in the form of more or less disseminated spots; occasionally it is located symmetrically on the hands and feet, sometimes in a papular form, often resembling the eruption of scarlatina, on occasions more rarely resembling urticaria. This simple erythema disappears in a few days, and is followed by a more or less copious scaling of the skin. It is not accompanied by fever nor by albuminuria. The absence of fever is an important point for differentiating this form of erythema from erysipelas migrans. The purpuric erythema is a graver form, and points to a deeper infection. Out of 6 cases, 3 were lethal, having during life exhibited fever, debility, albuminuria, articular pains, occasionally also enterorrhagia and hematuria. In those cases in which an examination was possible, the streptococci were discovered in the blood and in the urine during life, after death in all the rest of the organs. Of much less frequent occurrence is the polymorphous erythema. This usually invades the upper and lower extremities, excluding the face and the chest. It appears in the form of vesicles, which are filled with a sero-purulent, and sometimes with bloody contents, and frequently occurs on the mucous membrane of the mouth, pharynx and intestine. The eruption is at times so copious that it resembles a case of hemorrhagic variola. Nearly all cases suffer with albuminuria, and the urine contains streptococci.—*Société médicale des hôpitaux*.

ABSTRACTS

CONTRIBUTION TO THE STUDY OF TRAUMATIC DIABETES IN CHILDHOOD.

W. EBSTEIN (*Die aerztliche Praxis*, 1898, No. 18). Diabetes is not frequently found in children. Where it is found in children injuries are given as the cause with relative frequency. Although we are aware, how the laymen makes use of every traumatism as an etiological factor, we know, on the other hand, that traumatisms are important predisposing factors in the development of diabetes mellitus. That cases of traumatic diabetes are, with especial frequency, found in early childhood, is clear to Ebstein, from the fact that in a table compiled by him some years ago (1895) of 50 cases of traumatic diabetes, not less than 12 occurred in the first two decades of life; and if we place the end of childhood at sixteen years, according to Wegeli, who has reported the ages of 102 children suffering from diabetes mellitus, we will still have seven cases left out of the 50.

	Wegeli.	Ebstein.
Below 1 year.....	3	1
1 to 5 ".....	26	1
5 to 10 ".....	31	1
10 to 16 ".....	42	5
16 to 20 ".....	—	5
	102	12

Ebstein's 7 cases were briefly as follows:

1. Observation by Roszbach (1874); a child 8 months old, well nourished and healthy, had a fall on the floor. This was at once followed by convulsions and later by symptoms of concussion of the brain. The convulsions came on repeatedly. After four weeks the child lost greatly in weight in spite of the large quantities of food which were said to be taken, besides an increase in thirst and in the quantity of urine voided manifesting itself, and glycosuria was diagnosed. After the disease had existed for about three months death followed, having been preceded by the appearance of much eczema and many furuncles.

2. Observation of Pavy (1864); a child 4 years of age contracted a fracture of the skull. Following this there was total unconsciousness—no convulsions. Death occurred four and a half hours later. The urine in the bladder of the corpse contained sugar (0.33 in 30 gr.); superficial contusion of the base of the brain, ecchymoses on the floor of the ventricle was also found.

3. Observation of Collin (1862); a boy, 11 years of age, received a blow in the neighborhood of the kidneys, after which he presented undoubted symptoms of diabetes with copious excretion of sugar, how long after the occurrence of the accident could not be elicited. Weakness of

the legs made its appearance immediately afterwards, and about a year later the patient began to emaciate. He improved temporarily, but had a relapse. On account of the appearance of a cataract, he was operated upon. Death occurred about two years after the accident.

4. Observation of Seegen (1893): a child, 12 years of age, became violently frightened from a burn, caused by the tipping over of a lamp. Immediately afterwards intense thirst and all the symptoms of diabetes were observed.

5. Observation of Ebstein himself (1881: A 14-year-old girl, with no family taint, formerly healthy, was struck by a stone in the neighborhood of the liver. She complained of pain in this region for about eight days. Then followed great debility, pain in the limbs, and about four months later polyuria and polydipsia with sugar in the urine manifested itself. Death occurred two and a half years later.

6. Observation of Bernstein-Kohan (1891): A boy, 15 years of age, from healthy parentage. The patient was not very bright, and learned with difficulty, but was perfectly healthy. After a fall from a trapeze during gymnastic exercise, first on the glutei and then on the back, he was able to rise again promptly. During the following three days he complained of pain in the region of the kidneys, which kept him home from school. Three days later the patient began to urinate more frequently and developed a high degree of polyphagia and polydipsia, so that he was unable to continue his visits to school after fourteen days. In spite of repeated treatment at the hospital, which was always followed by marked improvement, no permanent influence could be exerted on the disease. When last in the hospital he voided 7 litre of urine in twenty-four hours. Specific gravity, 1.034; 6.9 per cent. of sugar; 0.5 per cent. of urates.

7. Observation of Plagge: A boy, 16 years of age, was struck on the head by a lathe. At first only a bloody effusion occurred, but in the following night strangury came on, which, however, ceased again during the following day. Three days later the sight became weak, violent thirst, and polyuria, with a large quantity of sugar, made its appearance. In two weeks he was cured by proper treatment, a simple polyuria persisting for two months longer.

We observe that these traumatisms need not be followed by the symptoms of a concussion of the brain, as it is claimed by some, and that in all probability a general concussion of the body or also an injury to portions of the body, which have no direct relation to the nervous system may be sufficient. Seemingly very slight injuries which have no connection whatever with any injury of the brain may be followed by the gravest form of diabetes.

Zimmer observed (1879) a young girl, 13 years of age, previously perfectly healthy, who fell on her seat during skating, and soon afterwards developed a severe diabetes. Family disposition is only exceptionally mentioned in this connection.

Frerichs (1883) treated a 13-year-old boy, whose 12-year-old sister was taken one year previously (etiology is not mentioned) with a severe diabetes, from which she died. The brother, who had been healthy until

August, became ill after some injury to his head during gymnastic exercises, with vertigo, violent thirst and diabetic urine (6 per cent.) and died in the latter part of October.

Ebstein observed a case himself where an hereditary predisposition may have been present, for the reason that the great grandfather and grandfather of the patient both suffered with stone in the bladder. In this case a grave disease was also developed (cases of a cure as that of Plagge are extraordinarily rare), from a slight traumatism the excitement caused by it probably being the exciting cause.

CONTRIBUTION TO THE ETIOLOGY OF ACUTE POLIOMYELITIS.

FR. SCHULZE (*Münchener Medicinische Wochenschrift*, 1898, *xlvi.*, 1197), contributed a paper with this title.

A boy, five years of age, was taken ill with a languid feeling and fever, on September 17, 1897. On the 19th, both arms were paralyzed, and the head fell back helplessly. Vomiting occurred several times, but only after the administration of medicine. The patient had fallen from a small wooden horse, a few days before his illness, as had frequently happened before, and had lightly struck his head. He seemed, however, afterwards in perfect health. When brought to the clinic on the evening of September 22, 1897, he presented no signs of fever. On the morning of the following day, a temperature of 38.1 R. was, however, found. This had declined to 37.8° by the evening, and then remained below 37.4° until diphtheria made its appearance in November. The boy suffers with slight drowsiness, which disappears when he is spoken to, so that on being asked, will give his name, and put out his tongue. Rigidity of the muscles of the neck or back was not present. Neither is there pain in the neck when the head is pressed forward or to the sides. It is only when he removes his shirt that he complains of pain in the neck. When the region of the neck is palpated, pressure on the muscles of the right side seems to produce slight pain, but firm pressure on the spinous processes of the cervical vertebræ produces severe pain. The pupils are contracted, and do not react very well to light; the functions of the ocular muscles, the facial and the other cerebral nerves do not present any demonstrable anomalies. Both arms are affected with a flaccid paralysis, there only being slight power of movement in the thumbs. The legs can be moved in any direction. The [patellar] reflex, and that of the tendo-achilles is only very slightly present on the right side; on the left it is absent. The reflexes of the plantar surfaces of the feet are, on the other hand, actively present on both sides; the abdominal reflex is normal. The tendon reflexes of the arms are absent, on the right as well as the left side; the latter retain their sensation to pain.

On the following day, great sweating takes place; drowsiness is, however, diminished. The patient apparently moves the left leg less than the right. The pupils are normal. On September 25th, the child is

perfectly bright, and calls for food and drink. When it is raised, however, the head falls powerlessly back, as had already been observed by the father, before the child was brought to the clinic. The faradic and galvanic irritability of the paralyzed muscles of the arm seems lowered; retarded contractions are absent. September 28th, the legs are more flexed at the knee joint than previously; passive extension produces pain. September 29th, distinct movements of the fingers, and of the wrist-joint, also pronation and supination are observed. The head may now, as before, be actively flexed forward; there is present neither rigidity nor pain in the neck. A lateral movement of the head to the left in the recumbent position is only rarely observed; to the right there is no lateral movement at all. September 30th, lumbar puncture was performed between the third and fourth lumbar vertebrae. The fluid spurted out, rising as high as 500 mm. in the air; the portion of the stream during respiration vacillates between 400 and 500 mm. Thirty ccm. were withdrawn, with a pressure towards the end of the operation of 200, which rose to 290 during the crying of the patient. The fluid which first escaped was clear; that coming later was mingled with a few flocculi. Specific gravity, only 100 c. Little albumen and a trace of sugar was present. The bacteriological examination revealed the presence of numerous diplococci arranged in short chains, and resembling gonococci, corresponding in all respects to Weichselbaum-Jäger's meningococci. A culture of glycerinagar could not be obtained, neither could one be made from the fluid which was obtained two days later by puncture. The micro-organisms are therefore to be looked upon as sterile, owing to the advanced stage of the disease. Leucocytes were not found; the micro-organisms therefore existed free in the serum. The pressure under which the spinal fluid was obtained in the second puncture proved to be very much less than in the first. After the first puncture, the patellar reflex, which was absent in the morning, could be obtained several times on the right side.

After several days; the patient is able to stretch his legs voluntarily, as well as move his head freely to the right and left. On October 5th, the patellar reflex of the left side also returned. On the right side it is distinctly present. The pulse has varied between 108 and 132 from the beginning of the observation.

October 17th, the patellar reflex is normal on both sides; the head does not appear to fall as far back, by its own weight, when the trunk is raised. The left hand and fingers are again freely movable. The muscles of the arm, especially the deltoids, present distinctly retarded contractions when the direct galvanic current is applied.

In the early part of November, a slight diphtheria of the pharynx occurred, which rapidly disappeared under the use of Behring's serum.

When the child was dismissed at the end of December, quite an extensive atrophic paralysis of both arms was still present. A certain number of the atrophied muscles, especially the deltoids present a total reaction of degeneration. The arms also seem to be less sensitive to stronger currents.

At a later inspection, August 29, 1898, both deltoid muscles, the muscles of both arms, as well as the supinator longi, the infraspinati, latissimi dorsi and the lower portion of the pectoralis major are found paralyzed and markedly atrophic. The hands and fingers are freely movable, the shoulders can be elevated. A closer examination, as well as the determination whether the patellar reflex is present or not, is impossible, on account of the great restlessness of the child. Walking, running, jumping, as well as the movements of the head are carried out normally. There is no loss of intelligence, or anomalies of the brain or cerebral nerves. The picture of a bilateral paralysis has therefore remained stationary for eleven months.

That this was a case of acute poliomyelitis, seems plain enough. The child suddenly became ill, with slight febrile symptoms, followed later by some vomiting, other symptoms being absent, and a flaccid paralysis of

both arms makes its appearance as early as the second day, which, ten days later it begins to improve. There is also present a paralysis of the muscles of the neck. A hematomyelia, which might have been suspected from the slight traumatism which occurred a few days before the paralysis appeared, is not to be assumed, as the paralysis took place so long after the injury; the seemingly decreased sensitiveness of the arms on electrical examination may also very well occur in poliomyelitis, as this may, in exceptional cases occupy nearly the whole area of the posterior horns.

Besides these disease symptoms, there are also a few others present, which we find in acute meningitis; the slight contractions of the flexors of the legs, as well as the slight pain on pressure in the neck, and the vomiting; above all, however, the increased pressure of the cerebro-spinal fluid. This may, it is true, also occur in a poliomyelitis or encephalitis, as a result of a greater exudation from the diseased vessels; but, in regard to this we know nothing positively. At all events, the slight drowsiness observed, and, probably also the absence at times of the patellar reflex may be referred to this increased pressure.

Finally, according to our present knowledge, the finding of Weichselbaum-Jäeger's diplococci, also points to acute cerebro-spinal meningitis. The symptoms of a common diffuse meningitis were absent, above all the well-known symptoms; headache, rigidity of the neck and back, extensive hyperalgesia. Besides, paralysis of the arms was present in a very early stage of the disease, which is not the case in non-tubercular meningitis; while, according to Leyden and Goldscheider, paralysis of the muscles of the neck, which was observed in this case, may, in so-called epidemic cerebro-spinal meningitis, occasionally occur primarily, in place of the usual rigidity of the neck. Finally, there was not a trace of purulent matter present in the cerebro-spinal fluid that was removed. We may therefore assume that a non-diffuse meningitis was present, together with a poliomyelitis.

That a combination of this kind is exceedingly rare, is gathered from the numerous histories of acute poliomyelitis and encephalitis, in whose early stage vomiting, somnolence, rigidity of the neck, abnormal position of the eyeballs, and more seldom pain in the neck, back and extremities quite frequently play a rôle. That it may also occur anatomically has been demonstrated in individual cases of recent poliomyelitis by others as well as also recently by Schulze himself, in the case of an adult, in which the clinical picture of a meningeal irritation was more obscure than in the present case, so that the picture only of an acute ascending motor paralysis was developed. In this case an irregularly distributed, but in places severe acute meningitis was present, together with an extensive acute poliomyelitis, which also involved, to a large extent, the posterior gray matter, and had in many places totally destroyed the nerve-fibres and the ganglia-cells. The larger vessels, particularly, were surrounded by an accumulation of new cells. Newly formed cell-material was, however, also found between the lamellæ of the pia and arachnoidea, especially in the lumbar portion of the spinal cord. Exciters of inflammation may, therefore, on the one hand, form foci in the meninges, and in the neighborhood of vessels, and at the same time cause the most intense inflammation, especially in the area of the anterior central arteries of the spinal-cord. It was up to now believed, that a poliomyelitis could either be present alone, or that, on the other hand, the gray substance only became involved in cases of severe diffuse meningitis. This is incorrect, however, for the reason that in a circumscribed, or faintly marked meningitis, the clinical symptoms of meningitis may retreat behind the paralysis, or be altogether hidden. We may, therefore, meet with symptoms of meningitis, in the absence of meningitis, as well as *vice versa*, with meningitis, where no meningeal symptoms are present. If the meningitis is pronounced in its clinical and anatomical symptoms, and if, as is usually the case, only the roots or peripheral portions of the spinal cord and brain

are attacked, we meet with the common picture of cerebro-spinal meningitis, and its event, permanent product symptoms. The involvement of the spinal-cord, or brain, is more prominent, or where these alone are affected, the disease picture of an encephalitis and poliomyelitis will be developed. Should both occur together in different degrees at times, and in different periods, the most diverse mixed forms occur in the same manner, let us say, as in pneumonia and pleuritis, whose contemporaneous presence also cannot be determined positively at times.

This relation between acute poliomyelitis and acute meningitis becomes still clearer as Weichselbaum-Jæger's diplococcus was found in the former disease for the first time in this case. This being the excitator of inflammation, which, according to our present knowledge, plays the most important rôle in the epidemic and the analogous sporadic cerebro-spinal meningitis. It cannot be denied, however, at all events that other micro-organisms, or other injuries may not also be concerned in this disease. If it can also cause a poliomyelitis in an indefinite large number of cases, we shall be able to explain many resemblances in the manner of the appearance of both forms of the disease. — The rapid retrogression of the symptoms in many cases of epidemic and sporadic meningitis on the one hand, as also in poliomyelitis, and the analogous encephalitis on the other, may above all be explained by the fact that a micro-organism, which is relatively rapidly overcome, like that discovered, has entered the system. At the same time we have the frequent occurrence of both diseases in the infantile and adolescent age; here the limitation must, however, be made, that a pure poliomyelitis rarely occurs in adolescence. Finally we also see the epidemic occurrence of both diseases, which undoubtedly happens less frequently in poliomyelitis than in cerebro-spinal meningitis.

Why in one case the brain, in another the gray substance of the spinal cord, in a third the meninges and their roots alone, in the fourth case Cortis' organ should be particularly affected, is as yet not known. For the present we will have to content ourselves with trying to discover other points of origin for the micro-organisms which may be active here, by means of lumbar puncture during the early stages of these diseases, and thus obtain a broader basis for the belief, in the absence of the rare autopsies of recent cases. The case is, however, not disposed of by any means, when we say that the case above described was one of cerebro-spinal meningitis, running an irregular course, accompanied by atrophic products. Should we nevertheless do so, we are compelled to do the same in a great number of other cases of poliomyelitis, and will thus reach the same point, which has been discussed above. As regards the question, in what manner the micro-organism discovered found its way into the cerebro-spinal fluid, we cannot say. It could not be determined whether a throat or an ear-affection had been previously present, especially as the ears were not carefully examined. From the frequency of otitis media in childhood, as well as from the readiness with which it may be overlooked, on account of the absence of its symptoms, the suspicion will always remain that many an etiologically obscure otitis media takes its origin from this cause. Have not the micro-organisms mentioned above been found even in the nasal cavity of healthy persons, and do we not frequently meet with an otitis labyrinthica leading to deaf-mutism, which is undoubtedly caused by meningitis when young, but which may probably also on its part arise from a bilateral otitis media. The reason why an otitis media is so frequently found absent in this otitis labyrinthica, is as difficult to explain as the fact that in epidemic or sporadic cerebro-spinal meningitis, which is so frequently looked upon as its cause, only the distributions of the acusticus and not also the nervus facialis, and other basil auditory nerves are involved.

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ORIGINAL ARTICLES

MASTOID COMPLICATIONS OF THE EXANTHEMATA IN CHILDREN.

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York Otological Society, etc.

AN acute inflammation of the middle ear is one of the most common sequelæ of the exanthemata. The frequency of mastoid involvement in these cases depends, I think, very largely upon the prompt treatment of the acute middle ear inflammation. In private practice where, through the courtesy of my confrères, these cases are seen early, involvement of the mastoid process is the exception rather than the rule. In dispensary practice, however, mastoid involvement is often seen.

When I was asked to take part in this discussion, your Chairman particularly requested me to deal with the subject as it presented itself to the general practitioner, rather than to the specialist. I shall therefore confine my remarks to the early diagnosis of involvement of the mastoid process and to the prevention of this complication, rather than to its treatment by operation.

The two diseases in which aural complications are most frequent are scarlet fever and measles. In the latter disease the middle ear inflammation is more commonly of a mild

character, and yields readily to treatment, if recognized in its incipency. In scarlet fever, inflammation of the middle ear is extremely common and progresses with great rapidity. An extension of the inflammatory process to the mastoid can only be prevented by the most radical measures in the early stages of the middle ear inflammation.

The history of a case of middle ear inflammation, complicating one of the eruptive diseases, is briefly as follows: After the eruption has made its appearance and the temperature has followed the characteristic course and has fallen to nearly the normal standard, we usually have an abrupt and considerable elevation. The thermometer frequently registers 104° and 105° , and the patient may complain of severe pain in one or both ears. In certain cases, however, the temperature is very high, and the pain seems to be masked by the general constitutional infection. The patient is slightly restless, but does not complain of severe pain in the ear. This is particularly true in cases of scarlet fever. If the case is allowed to run its course, the membrana tympani may rupture, and there is a profuse discharge from the external auditory meatus. Coincident with the appearance of this discharge the temperature falls, and the general condition of the patient improves. In young children, however, the temperature may remain elevated from no apparent cause, and in the course of several days, even without any aural discharge, a post-auricular swelling will be noticed. This indicates that there has been an inflammation within the typanum; instead of spontaneous rupture of the drum taking place, the pus incident upon the inflammatory process has made its way through the Rivinian fissure, along the upper and posterior wall of the canal, and has appeared as a subperiosteal abscess behind the ear. I have seen this condition very frequently in dispensary practice, and occasionally in private practice.

The treatment of these cases may be considered under two heads: 1st, prophylactic treatment, and, 2d, the treatment of the mastoid after it has actually become involved. In any eruptive fever, where there is a sudden rise of temperature which cannot be explained by the general condition of the patient, the attending physician should always examine the ears. If inflammation of the tympanum is present, a free incision should be made in the membrana tympani, and should

extend from a point just below the tip of the handle of the malleus upward to the tympanic ring. Where the temperature is high, it is wise to continue this incision for a considerable distance outward upon the superior wall of the canal, dividing the soft parts down to the bone. The object of this incision is not only to evacuate any secretion which may be present, but also to relieve tension and to prevent further extension of the inflammatory process. If the mastoid is tender on pressure, either the Leiter coil or the icebag should be applied, and should be kept on continuously for a period not exceeding forty-eight hours.

In those cases where mastoid symptoms appear after spontaneous perforation of the drum membrane, it is always wise to attempt to secure free drainage through the meatus by means of the incision just mentioned. Frequent irrigation of the external auditory canal with a lukewarm solution of bichloride of mercury should be employed in all cases where there is a discharge from the tympanum, either as the result of spontaneous rupture of the drum membrane or after surgical interference.

In those cases which are seen at a later period, and where a fluctuating tumor is present behind the ear, operative interference should at once be instituted.

I wish to emphasize particularly in this connection the fact that the evacuation of the post-auricular abscess by a simple incision through the soft parts is not sufficient; even in very young children the mastoid antrum should be entered in every instance. It not infrequently happens that, after incising the soft parts and evacuating a post-aural abscess of this description, no sinus will be found through the mastoid cortex. The surgeon is often tempted to discontinue the operation at this point. The bony structure of the mastoid should, however, invariably be entered. Although the cortex may be perfectly normal, we always find in these cases some softened bone, either in the mastoid antrum or in the *aditus*. Free posterior drainage of the middle ear should always be established. Undoubtedly a certain proportion of these cases recover after a simple incision; in a rather large proportion, however, a radical operation becomes necessary at a later period. It must be remembered that in young children the cranial bones are very thin, and that infection of the intra

cranial structures may occur through the external surface of the temporal bone, as well as through the tympanic roof or through the posterior wall of the mastoid antrum, as so frequently happens in adults. I have reported, some years ago, a case of suppurative meningitis of this kind. If the middle ear is thoroughly drained by a posterior opening into the mastoid antrum, subsequent infection of the intracranial structures is impossible. The mastoid operation itself can be performed in a few minutes, and, if thorough aseptic precautions are taken, is devoid of danger.

In infants it should be borne in mind that the tympanic ring is applied to the external surface of the temporal bone, and that no osseous meatus is present. The upper wall of the canal is attached to the squamous plate of the temporal bone and the lower wall of the canal lies in immediate contact with the upper wall. In order, therefore, to obtain a perfect view of the drum membrane in an infant, it is necessary to draw the auricle downward, backward and outward; in other words, to separate the inferior wall from the superior wall. In the operative technique this point must also be remembered. In infants the surgeon is seldom called upon to interfere before a post-auricular abscess makes its appearance. When this abscess is evacuated, the surgeon should carefully follow the membranous meatus downward as far as the tympanic ring, exposing the posterior tympanic spine. If the cortex is perforated in this region, the mastoid antrum and middle ear will be easily entered. If, however, the line of superior auricular attachment is taken as a guide, there is great danger of entering the middle cranial fossa instead of the mastoid antrum. Particular stress should be laid upon this point. As I have before stated, a post-auricular abscess in an infant is always so strongly indicative of inflammation in the mastoid antrum as to necessitate operative interference. While some cases recover after simple incision of the abscess, it is never wise to depend upon this procedure.

ON THE EARLY TRAINING OF BLIND CHILDREN.

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THE importance of suitable training for the blind is now generally recognized, and provision for their education is made in all civilized countries. In many countries, indeed, blind children are included in the provision of the legislature for securing compulsory education. In Scotland, for example, the school age for blind children is from five to fourteen, and children between these ages are required to attend schools for the blind or to give evidence of suitable instruction elsewhere. The age of five years has accordingly come to be regarded as the age at which a blind child should enter school. Until recent years very few schools in Britain admitted children as young as this. The average age for admission was nearer ten than five. Some schools did not admit children under twelve. The reason for this was that most of the schools for the blind in Britain are charities, and to many of them admission was granted only for a limited number of years. Accordingly it was considered inadvisable to admit a scholar until he was old enough or nearly old enough to learn, in addition to the ordinary school subjects, some trade by which he might hope to maintain himself in after life. The system now in force in Scotland is proving very satisfactory. Every blind child must be sent to school at the age of five years. Poor children are paid for by the School Board. The blind child, like the seeing child, is able to earn the Government Grant for his school. Children sent to school thus early are much more easy to teach, and make much more rapid progress than those the commencement of whose school education is deferred to a later date.

The principal initial difficulty in the education of blind children lies in the fact that a majority of these children when admitted to school are found to be deficient in more ways than the want of sight. This deficiency arises not from any natural defect or incapacity on the part of the child,

but simply from the want of proper home training during the years of infancy and early childhood. It is in the hope that some hints on this subject of home training may prove interesting and useful that these notes are written.

In the first place, however, a few words must be said as to the nature of the defects met with in blind children. These almost all arise from excessive, foolishly excessive, care on the part of the child's parents. Fearful of accidents, they restrict and hamper the child in every possible way, even, in one case I know of, to the extent of keeping it confined to bed for eight years. This child, when admitted to school at the age of eight, was feeble in mind and body; unable to walk, unable to stand, unable to do the simplest things for itself, unable even to feed itself. Yet it was not an idiot. Apart from its blindness it was a normal child whose development had been arrested in infancy. The capacity for development was still present, and now after prolonged and patient effort on the part of skilful teachers it has advanced so far that, to the causal observer, it would appear simply a very backward blind child. This instance is, of course, an extreme, and, happily, an exceptional one. Still it serves to show the kind of defects most common in blind children.

A very great many children when admitted to school have very little self-reliance. Able to walk about, they are afraid to do so without guidance. They have been accustomed to be led by the hand, and to have obstacles removed from their path, and have never developed sufficient confidence to go about without assistance. Never accustomed to do anything for themselves, they have, in many instances, lost the power of grasping firmly. The very idea of grasping may be absent. The hands hang limp and helpless. Anything placed in the hand, instead of being held firmly, will probably be allowed to drop. Even the ligaments may be slack, so that hyperextension of the fingers readily occurs. This defective grasping power, associated as it is with a defective sense of touch, is a serious difficulty in the way of teaching a child whose education may be said to take place chiefly through its fingers. The great sensitiveness of touch with which the blind are supposed to be endowed, as if in some measure to make up for the want of sight, is no gift of nature. When present at all it is in all cases a result of careful training and long practice. A similar

defect of grasping power is sometimes present in idiots, even in quite early infancy, and is regarded by Dr. Ireland as indicating that the child will not be capable of any high degree of training. No such significance can be attached to the defective grasp of the blind child. The defect in his case is not congenital and indicates no mental deficiency, but has been brought about by disuse, and can be restored again by careful and patient training. It may be of interest to mention in this connection an appliance which Mr. Illingworth, Head Master of the Edinburgh Blind School, has invented and found very useful for the purpose of training the grasping power. This consists simply of a thick board in which a number of holes have been bored in rows—~~say~~ five rows of five holes each—and a number of pegs to fit the holes. A few pegs are taken and placed loosely in a corresponding number of holes, and the child is made to practice pulling them out with the thumb and fore-finger, with the thumb and second finger, and so on with the other fingers. As the grasping process increases, the pegs can be put in more tightly, and the child can be exercised in putting them in as well as pulling them out. To strengthen the hand grip, longer pegs can be stuck in the holes and pulled out by grasping with the hands. If this appliance is used by a careful teacher, by the time the child has learned to grasp well it will also have learned to count and to know the multiplication table, or, at any rate, a good deal of it.

Blind children when admitted to school are very frequently addicted to bad habits which may be very difficult to eradicate. Some of these habits are not of much importance in themselves and would matter little if the child were to spend his life in some asylum for the blind. But the object aimed at in all schools for the blind nowadays is to fit their pupils to enjoy social intercourse with the seeing and to earn a living for themselves. Any such habits as I refer to naturally stand seriously in the way of the attainment of these objects. Perhaps the most common of these habits to which blind children are addicted is the making of hideous grimaces, grinning broadly, drawing the mouth to one or other side, or screwing up the eyes and wrinkling the forehead. Such a habit is, I believe, most common in children whose blindness is not absolute but who have some perception of sight, or are able even dimly to make out form.

Where the blindness is due, for example, to opacity of the cornea, the child may be able to see very dimly in one particular direction out of the corner of the eye, so to speak, and such grimaces as I have referred to often seem to be made in the effort to see, but the child soon gets into the habit of making them during conversation, or when excited, or when occupied in any way. Children who have faint light perception often display peculiar pleasure by getting into the sunshine and screwing their eyes up toward the sun. A common habit of such children is to turn the back of their hand to the side of the face on which the sun is shining, and spreading the fingers widely apart, move the hand up and down between their eye and the light. Even children who are quite blind often delight in sitting in the sunshine and performing peculiar movements, such as jerking the head from side to side or flapping their hands up and down, often for hours at a stretch. These are only a few examples of the sort of habits into which blind children are apt to fall. Only too often they have been encouraged by the parents, who see that they give some sort of pleasure to the child, but fail to see what a drawback they will prove in after life.

These few remarks may seem to emphasize the importance of proper early training of blind children. Training should not be regarded as beginning when the child is sent to school. It should begin as early as possible—at birth, one may almost say, in the case of children born blind; as soon as sight is lost in the case of those becoming blind at a later date. The proper method of training can be expressed in a few words: *The blind child should, so far as possible, be treated exactly as if it were able to see.* During infancy toys should be given to it to play with. As early as possible it should be allowed to creep about by itself and investigate its surroundings. When it begins to try to walk it should be encouraged to do so. It must examine everything in the room and find out by experience as the seeing child does, that it is inadvisable to collide with the chairs or to knock the head against the leg of the table. As the child grows, it must be taught to do anything that it would learn if it could see—to open and shut the door of the room, to find its way about the house, to fetch its own chair at meal times, to dress and undress, and to feed itself. On no account should obstacles be taken out of its way, beyond seeing that it does

not meet with any serious accident. For example, if the child is seen to be going to walk against a chair, the chair should not be taken out of his way, nor should he be warned that it is in the way. If he is ever to learn to go about alone with confidence, he must learn to do so by experience. It is wonderful with what confidence the blind, brought up in this way, learn to make their way about. They seem to know by a sort of intuition when they are approaching any obstacle, and avoid it almost as if they could see it. Samples of this confidence are common enough. The writer knows of a blind gentleman who is an accomplished skater, and who, on one occasion, saved a man from drowning by jumping from a pier and swimming to him, guided only by his cries.

Among the toys most suitable for blind children, few are more useful than the ordinary wooden blocks or bricks—cubes and oblongs of wood which the child is taught to build up on the top of one another. As soon as he is old enough, some of the simple kinds of kindergarten work may be introduced. Plaiting with strips of paper or cane, bead-work, and clay modeling are all useful. Even a very young child may be taught to sort out the different sizes of beads by means of wire gauges on to which the beads are strung. The necessary feeling for the holes in the beads is an excellent means of educating his sense of touch. The handling and threading of the small-sized beads also trains the finger tips for afterwards feeling the dots of the Boaille or New York embossed type. Folding paper in various ways may also be taught to young children. Clay modeling in its simpler forms can be taught to quite young children, and is very instructive. At first they should try to model very simple objects, such as a cube—e.g., one of their “bricks.” With all these, out-door exercises must not be neglected, and a blind child soon learns to enjoy traveling, running, jumping, skipping, swinging, and so on, as much as a child that can see.

Parents should also be instructed to look out for the appearance of any peculiarities or bad habits such as those already mentioned on the part of the child, and to correct them at once. This is comparatively easy if done at once, and should never be neglected or put off on the plea that the habit in question gives some pleasure and seems of little importance while the child is young. If the habit is allowed to grow on

the child it will become exceedingly difficult, if not impossible, to eradicate it, and great trouble and annoyance will result therefrom in after life.

If these points are carefully attended to in early life it is almost obvious that the subsequent education of the child will be carried on far more easily and pleasantly both for himself and for his teachers than if, as is so often the case, they are neglected



A CASE OF ACETANILID POISONING FROM EXTERNAL ABSORPTION IN AN INFANT.*

By THOMPSON S. WESTCOTT, M.D.,

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THE following observation is of value as offering another instance of the facility with which acetanilid, when externally applied, may find its way into the circulation and produce toxic effects. The patient was a female infant, about 4 months old, the child of a physician, through whose request I saw the case in the later stages after recovery was already assured. She was a well-developed, fat little baby, nursed entirely upon the breast, and during the hot weather of last Summer, at Atlantic City, she had suffered severely from the heat, perspiring freely and becoming chafed in the folds of the groin and the creases of the thighs. In some of these localities the intertrigo had become almost eczematous. For the treatment of this condition a dusting powder of pure acetanilid had been ordered and used only once when the alarming symptoms developed. About 10 o'clock on the morning of that day the powder had been dusted upon and rubbed over the affected surfaces. The baby was then nursed and put to sleep in her crib. When taken out at 1 P.M., the time for her next nursing, the mother noticed that the skin had a peculiar grayish pallor and the lips were bluish, though the surface temperature did not seem lower than usual. She nursed well, and went to sleep again at 2.30 P.M.; the skin was waxy; the mucous membrane of lips and tongue more deeply cyanotic and the face drawn and pinched-looking. At 3.30 P.M. the appearance was still unchanged, and the child was in a heavy slumber, from which she could not be easily aroused. There was said to be no sweating, and at the time the father first saw her, about 5 P.M., she had improved somewhat in appearance; the cardiac action and respiration were not appreciably disturbed. A few drops of whisky were then given hourly, and when I saw her, about 6.45 P.M., the cyanosis was passing off and continued to do so appreciably, as I watched her for fifteen or twenty minutes. She could be roused easily, but

* Read before the Philadelphia Pediatric Society, April 11, 1899.

was disposed to lie quietly and readily fell asleep again. The pupils were normal, and the pulse and respiration showed no marked alteration. Recovery was thenceforth uninterrupted, without demanding further treatment. The remains of the powder had not been removed until the father saw her, some four or five hours after, signs of poisoning were first noticed, and when improvement had already begun; so that it seems likely that continued absorption of the drug had been checked by the process of crusting over the exposed surfaces of the derm.

Since the introduction of acetanilid as a dressing for wounds by Harrel in 1893 (*Medical News*, October, 1893) numerous instances of toxic absorption have been recorded. Less frequently have like results followed in more superficial lesions of the surface of the skin.

Newton (*Medical Record*, March 7, 1896), records the case of a child with extensive burns of the face, arm, and leg. The central portions of the wounds were sprinkled with acetanilid, between twenty and forty grains being used on five occasions in nine days. When this dressing was applied on two successive days there followed in four hours a condition approaching collapse, marked by extreme cyanosis, weak and rapid pulse, and dilated pupils. Recovery was gradual, cyanosis and coldness persisted for several hours.

Briggs (*Occidental Medical Times*, October, 1895), observed mild toxic symptoms after use of the drug as a dressing for a circumcision wound in an infant a week old.

Carmalt (*Yale Medical Journal*, 1896, p. 131), produced cyanosis in a girl of 18 years by using the powdered drug upon a profusely suppurating ulcer.

Rook (*Journal American Medical Association*, 1896, xxvi., p. 239), records two serious cases—one in a baby 4 days old with erythematous inflammation of the skin, nates, thigh, and groin, for which several applications of a powder composed of equal parts of acetanilid and bismuth were used. Death occurred within eighteen hours after the powder was first applied. In a second case, an infant two days old, Rook used the drug for erythema of thighs and nates. Intense cyanosis was observed about twenty-four hours after the first and only application, but the child recovered.

Snow (*Transactions American Pediatric Society*, vol. 9, 1897, p. 39), has seen severe symptoms from absorption of the

drug from the umbilical stump after detachment of the cord on the seventh day, about 60 grains of the crystals having been used once. Absorption was slow, and symptoms did not appear until after the ninth day, full sixty hours after the drug was applied.

In the case here recorded the actual amount of surface capable of directly absorbing the drug was very small and in no way comparable to the area of surface exposed in the extensive burns presented by Newton's patient. In both of Rook's cases, however, there was apparently no break in the surface of the skin, but absorption seems to have been nearly as rapid as in cases presenting open surfaces.

The conclusion may be justly drawn that the use of acetanilid as a dessiccant dressing with young children, even when there is an insignificant exposure of the derm, is distinctly dangerous to life.



GROWTH OF CHILDREN IN GERMANY.

By ARTHUR MACDONALD,
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WE give the results of measurements by specialists in a few places in Germany.

Further measurements and other data on the study of children will be found in a work* (by the writer) to be published by the Bureau of Education.

CHILDREN IN HAMBURG.

In an investigation of the 515 students of the Johannaum, in Hamburg, Kotelmann makes the following statements:

The students in the gymnasium exceed those in the lower schools in weight and height, more because of unfavorable social conditions of the pupils in these schools. The older the boys the more the muscles of the upper extremities grow as compared with those of the lower, which is explained by the fact that, as they are sitting more, the lower extremities are less active. Thus the muscles of the legs are less contractile as years increase, while the opposite is true with the muscles of the arms. With this is connected the further fact that the strength of the arms increases from year to year with the increase of their circumference, while the strength of the leg as compared with that of the arm is less as age increases.

The development of the superficial fascia, which increases with weight of body in the older pupils, is not only greater than in the younger pupils, but increases greatly with the growth of the muscles in the older scholars.

The time of puberty is of the greatest importance for the whole development of the body, since not only the height and weight, but also the muscles and strength of the upper and lower extremities, the chest girth and lung capacity, all at this

* EXPERIMENTAL STUDY OF CHILDREN, including Anthropometrical and Psychophysical measurements of Washington school children; measurements of school children in United States and Europe; description of instruments of precision in the laboratory of the Bureau of Education; child study in the United States, and a bibliography. Reprint (from Annual Report of U. S. Commissioner of Education for 1897-98), 325 pages, 8°. Washington, D.C., 1899.

period increase the most. The only exception is the increase of fat, which is somewhat irregular at different ages.

The lung capacity increases with age faster than the length of the body. Following is the table of Kotelmann:

TABLE I.

Age.	Length of body.	Lung capacity.	Relation of length of body to lung capacity.
	<i>Centimeters.</i>	<i>Cubic cm.</i>	
9 years.....	128.58	1,771.15	1 : 13.77
10 years.....	130.75	1,865.45	1 : 14.26
11 years.....	135.06	2,021.66	1 : 14.22
12 years.....	139.91	2,177.41	1 : 15.56
13 years.....	143.09	2,270.28	1 : 15.86
14 years.....	148.88	2,496.15	1 : 16.76
15 years.....	154.19	2,757.69	1 : 17.88
16 years.....	161.65	3,252.97	1 : 20.12
17 years.....	166.90	3,533.72	1 : 21.29
18 years.....	168.39	3,686.11	1 : 21.89
19 years.....	166.86	3,891.25	1 : 23.32
20 years.....	167.19	3,926.92	1 : 23.48

Wintrich also confirms the conclusions from the above table.

But, on the other hand, the weight of body increases with age faster than the lung capacity, as shown in the table which follows:

TABLE II.

Age.	Weight of body.	Lung capacity.	Relation of weight of body to lung capacity.
	<i>Kilograms.</i>	<i>Cubic cm.</i>	
9 years.....	25.55	1,771.15	1 : 69.32
10 years.....	26.89	1,865.45	1 : 69.37
11 years.....	29.22	2,021.66	1 : 69.18
12 years.....	32.34	2,177.41	1 : 67.51
13 years.....	34.01	2,270.28	1 : 66.75
14 years.....	38.96	2,496.15	1 : 64.07
15 years.....	43.65	2,757.69	1 : 63.18
16 years.....	49.33	3,252.97	1 : 65.94
17 years.....	54.03	3,533.72	1 : 65.77
18 years.....	57.34	3,686.11	1 : 64.28
19 years.....	58.76	3,891.25	1 : 66.22
20 years.....	60.40	3,926.92	1 : 65.01

Vierordt has arrived at similar results by combining the figures of Schnepf for lung capacity with those of Quetelet for weight of body.

BOYS OF BRESLAU.

Carstädt, of Breslau, gives the result of 4,274 measurements in the following table:

TABLE III.

Age.	Number of measure- ments.	Average height.	Growth in—	
			One-half year.	One year.
		<i>Centimeters.</i>	<i>Centimeters.</i>	<i>Centimeters.</i>
6 years	68	109.3	.....	.....
6½ years.....	147	111.8	2.5	.....
7 years.....	203	113.8	2.0	4.5
7½ years.....	199	116.8	3.0	.....
8 years.....	197	118.9	2.1	5.1
8½ years.....	189	121.6	2.7	.....
9 years.....	174	123.7	2.1	4.8
9½ years.....	157	126.0	2.3	.....
10 years.....	204	128.5	2.5	4.8
10½ years.....	232	130.8	2.3	.....
11 years.....	272	133.3	2.5	4.8
11½ years.....	317	135.6	2.3	.....
12 years.....	298	138.1	2.5	4.8
12½ years.....	325	140.4	2.3	.....
13 years.....	291	143.3	2.9	5.2
13½ years.....	274	145.8	2.5	.....
14 years.....	266	149.1	3.3	5.8
14½ years.....	157	152.3	3.2	.....
15 years.....	125	156.6	4.3	7.5
15½ years.....	104	159.9	3.3	6.2
16 years.....	75	162.8	2.9	.....
16½ years.....	60	164.5	1.7	.....

In the four years from 8 till 12 the growth is entirely regular, being for each year 4.8 centimeters. The greatest growth is from 14 to 15.

JEWISH CHILDREN.

The development of the head of children has been studied but very little. It will be interesting to give some of Weissenberg's measurements of Jewish children. It is to be regretted that the number measured is small, especially of the youngest. The table below, No. 4, is a combination of selected measurements from Weissenberg's tables.

The circumference of the head of the new-born child is over 60 per cent. of its full length of body when grown. At birth the circumference of head is about three-fourths of the height of the body; when the child is grown, it has fallen to only one-third of the height of the body.

As to the shape of the head, it is rounder in childhood, but gradually becomes longer as indicated by the cephalic

index. As before indicated, the length grows faster than the width.

TABLE IV.

	New-born children (3).	5 years old (4).	10 years old (25).	Grown children (100).
	<i>Mm.</i>	<i>Mm.</i>	<i>Mm.</i>	<i>Mm.</i>
Circumference of head.....	365	504	521	550
Maximum length of head.....	118	170	175	183
Maximum breadth of head.....	102	144	147	151
Cephalic index.....	86.4	84.7	84.0	82.5
Per cent. of dolicocephaly.....				1
Per cent. of mesocephaly.....			12	18
Per cent. of brachycephaly.....	33	50	48	62
Per cent. of hyperbrachycephaly.....	67	50	32	19
Per cent. of ultrabrachycephaly.....			8	
Height of face.....	60	93	101	119
Bizygomatic diameter.....	89	113	122	138
Width of nose.....	19	26	30	34
Height of nose.....	24	40	47	54
Distance between the eyes.....	21	27	30	31
Nasal index.....	79.2	65.0	63.8	63.0
Height of body.....	520	1,060	1,272	1,651

The height of face (Table 4) during the first five years increases more than the other parts of the head; during the second five years the increase is small, but larger afterwards. The width of face or bizygomatic diameter, though having a smaller increase than the height of face, corresponds to it in its growth. The distance between the eyes increases parallel with the width of head; the increase from birth to adult age is only 10 millimeters; at birth this distance is 68 per cent. of its full growth.

The height of nose represents the middle division of the face, which grows the most of all, both in width and height. The nose grows much faster in height than in width; the nasal index decreasing with age.

The face may be divided into three parts (Weissenberg): The upper part, from the vertex to the root of the nose; the second or middle part, from the root of the nose to the base of the nose, and the lower part from the base of the nose to the end of the chin.

In duration and quantity of growth these three divisions of the face increase from above to below. The middle division increases the most, and it is the upper jaw that rules the growth of the whole face.

The relatively small increase of head, as compared with body, may be due to the fact that from the day of birth the child needs its brain and senses as much as when it is grown.

EDITORIAL COMMENTS

Some defects in the membrana tympani heal spontaneously, and this tendency to close often interferes with the management of middle-ear suppuration—
Okuneff's Method of Closing Perforations of the Membrana Tympani
nay, more, in paracentesis of the membrane done for therapeutical reasons, the tendency of the punctured membrane to heal is often entirely unwelcome. On the other hand, after severe acute otitis media, or in connection with chronic middle-ear disease, there result larger or smaller defects of the membrane which refuse to heal, although there is every reason for bringing about such closure. These openings are a menace to hearing and to the health of the ear; they disqualify for life insurance and also, in Austria at least, for the military service; and in general predispose to mastoid disease and intracranial complications. Otologists have long sought for a plastic operation which would close these perforations. Cuticle has been transplanted from the arm, and the shell membrane of the hen's egg has been used for grafting purposes; but in these and all similar procedures the technical difficulties have been too great to permit routine adoption. In 1895 Okuneff reported a new and simple method of closure based upon rational grounds. The tendency of these perforations is undoubtedly to heal by granulation, but in certain cases the formation of an overlying epithelial tissue acts as a restraint to the granulating process. In all such cases Okuneff simply burns off the epithelial tissue with trichloroacetic acid and thereupon the subjacent granulating tissue readily closes the breach. He reported twenty-three recoveries out of forty-two attempts at closure. The sessions of treatment were at intervals of from four to fourteen days. If the procedure caused pain, a little cocaine was thrown into the middle ear. A search into half a score or more of the most recent text-books on otology reveals the fact

that Okuneff's method is absolutely ignored. Nevertheless, since the first publication of this method (*Congress of Otology*, Moscow, 1895), much corroborative evidence of its worth continues to accumulate. In the Austrian Otolological Congress, 1898, Riehl, Singer, Pollak, and Alt all spoke highly in favor of the operation. The most recent advocate of the worth of the method is Pelsesohn (*Berlin klin. Wochenschrift.*, April 17, 1899). He has obtained five complete recoveries in seven cases, the remaining two being still under treatment. According to Pelsesohn, the middle layer of the membrane is never regenerated, so that the new drum-head is thinner than the normal structure. Hearing is not affected by the operation, nor does suppuration persist in the tympanum after closure. He predicts the most brilliant future for Okuneff's operation, and states that the pediatricist is especially to be congratulated upon this addition to his therapeutical resources.

**Diagnosis of Tuberculosis in
the First Year of Life**

Despite the fact that our resources for making a diagnosis of tuberculosis have of late been considerably augmented—for example in the direction of serodiagnosis, radiography, demonstration of the presence of virulent toxins in the sweat, etc.—the most astute clinicians in Europe appear to be quite dissatisfied with the want of success attending their efforts to diagnosticate tuberculosis during the nursing period of infancy. Bulius, working under the direction of Professor Heubner in the Berlin Pediatric Clinic, section for nurslings, has recently sought to extract a little more certainty in this particular from an elaborate clinical and post-mortem study of a considerable number of cases of tuberculosis in nurslings. His results are not altogether reassuring to the ambitious clinician. He limits the field by excluding clean-cut tubercular affections, such as meningitis, where the chance of a correct diagnosis is reasonably certain, and confines himself to that class of cases where the symptoms are confusing and even apparently antagonistic

to the *a priori* conception of the disease as derived from the study of tuberculosis in general. The difficulty attending diagnosis arises from the dissimilarity of individual cases, from the absence of a predominant type. If required to condense his views into a practical axiom, the latter would be as follows: If the sputum is free from specific bacilli, and if specific skin and bone lesions are absent, the diagnosis of tuberculosis cannot be made with certainty.

As the clinician in default of certainty demands reasonable probability, Bulius sums up the various symptoms which points towards or away from the diagnosis of tuberculosis. An anamnesis which shows that the nursling has been in daily contact with a tuberculous parent or attendant is of great value in making out a *prima facie* case of tuberculosis. Change in the disposition of the child is a trustworthy symptom. The fact that a simple affection, such as eczema or furuncle, tends to run a torpid course, is altogether suspicious. The association of a good appetite and digestion with progressive emaciation and weakness also points toward tuberculosis. Cervical adenopathy is of no value whatever as a symptom unless the degree is high; but slight enlargement of the supra clavicular glands speaks for tuberculosis. If cough is present it has some value as a symptom, but absence of cough by no means excludes the disease. Fever, present or absent, has no significance whatever in making a diagnosis. Transitory collapse in apparently healthy children should awaken suspicion. In the more acute forms of the disease Bulius has noted the following as fairly constant: striking disquiet or jactitation, with occasional convulsions. On the other hand, if either diarrhea or acute nephritis is present, acute tuberculosis is probably absent. In the class of cases studied by Bulius (meningitis and tuberculosis of mesenteric glands being excluded), the post mortem findings demonstrated that the bronchial glands were the most constantly involved, and that these structures served as distributing points for the tubercu-

lous virus. Ulceration into a bronchus produced acute tuberculous pneumonia. Dissemination along the lymphatics produced multiple peribronchitis. Entrance of the virus into the systemic circulation produced more or less diffused miliary tuberculosis. Usually these three processes were associated in individual patients. It is not improbable that the diagnosis of this form of tuberculosis could be made by Salter's method of recovering the sweat—which is known to contain tuberculin—and testing it physiologically upon guinea pigs.

On the Routine Examination
of the Accessory Cavities of
the Nose After Attacks of
Scarlatina and Other
Infectious Diseases
of Childhood

The ravages produced in the middle-ear by scarlatina and its congeners are understood even by the laity; but the possibility of similar invasion of the nasal sinuses in childhood is ignored by the majority of physicians. Autopsies upon the bodies of children dead of scarlatina, measles, whooping-cough, and influenza have frequently shown the existence of sinus suppuration, due to the extension of the specific rhinitis into those accessory cavities. Doubtless in many cases of this sort spontaneous resolution of the local mischief accompanies the recovery of the general health. We know, besides, from autopsies that suppuration of the sinuses may be present in certain cases without the suspicion of its existence during the life of the patient. But as the etiology of chronic intra-nasal diseases (a number of which date from childhood) is in a very unsettled state, it behooves us not to lightly disregard any agency which might contribute to the production of these affections. What do we actually know of the causation of ozena, adenoids, polypi, and empyema of the sinuses? Is it not extremely probable that a residual purulent focus in the nose would be able to contribute prominently to the production of these affections? The statement is frequently made that the sinuses of children are undeveloped, and doubt-

less some harm is done by repeating this generalization as if it were an axiom. The statement is, of course, approximately true of infants in the very first years of life, but applies in no wise to children at the age of eight or ten years. It would be a commendable routine practice for the family physician to bring about a careful examination of the condition of the sinuses after every severe attack of any of the infectious diseases indicated above in children who have passed the period of second dentition.

Until it is possible to assay the crude drugs which owe their activity to non-alkaloidal constituents, or (failing in this) to manufacture such active principles synthetically and at a cost sufficiently low for general consumption, the so-called Galenical preparations—tinctures, extracts, etc.,—must continue in common use, and the efforts of the pharmacists must be devoted to standardizing all such drugs as digitalis, strophanthus, ergot, and cannabis indica, in order to secure uniformity of strength and action. Since all attempts at pharmaceutical standardizing are greatly hampered by the variations in crude drugs, the conscientious manufacturer has been led to develop the physiological method, using for this purpose the frog and other animals. The physiological test has long been recognized in qualitative work, and its extension into the quantitative field—for determining not only the identity but the amount or activity of a drug—is inevitable in the progress of medicine.

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SOCIETY REPORTS

THE PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting April 11, 1899.

The President, Dr. EDWIN E. GRAHAM, in the Chair.

Dr. J. H. JOPSON read a paper on **Cicatricial Stricture of the Esophagus in Children**, and exhibited a patient in whom gastrostomy had been performed. In children, the most frequent cause of this condition is the ingestion of caustic substances, especially lye, and these strictures are of the most intractable nature, owing to their length and the fact that they are usually multiple. The symptoms may come on at a longer or shorter interval after the swallowing of this caustic, and the symptoms of ulceration may shade into those of contraction. The symptoms are: gradually increasing difficulty in swallowing, first of solids, later of soft foods and liquids, vomiting after the taking of food, pain and tenderness, localized or referred to neighboring points, constipation or diarrhea, and tendency to catarrhal affections of the bronchi. The tendency is for progressive contraction until even soft and liquid foods encounter obstruction, and the symptoms of starvation are added to the clinical picture. The diagnosis of the stricture may be made, and information elicited as to its location, calibre, and permeability by the passage of bougies, soft instruments being preferable for this purpose. The methods of treatment employed comprise gradual or rapid dilation from the mouth, electrolysis, esophagostomy, internal and external; esophagostomy, simple gastrostomy, and gastrostomy combined with retrograde dilatation, retrograde divulsion, internal esophagostomy, continuous dilatation and Abbe's string method. The cases not responding quickly to gradual dilatation from the mouth, gastrostomy will frequently be required, and the mistake is more usually made of putting it off until too late than of performing it too early.

The patient exhibited was a girl, aged 4 years, with a lye stricture of the esophagus 7 inches from the teeth. The stricture being impassable to bougies, gastrostomy was urgently demanded to obviate threatened starvation, as there

was almost complete obstruction to the passage of liquids. The operation was done in two stages.

There had been a marked gain in weight and strength since the operation, and the rest given the esophagus had resulted in a partial restoration of the power of swallowing. A tube was worn in the fistula for a time, when it was discarded, and a rubber belt with an inflated bulb in its centre used with admirable effect to control leakage. Two months had elapsed since the operation, and it was now proposed to practice Zeehuisen's method of dilatation with silver balls of graduated size to be attached to a thread, swallowed, and withdrawn after they had passed the stricture.

Dr. L. J. HAMMOND.—It would seem out of place to mention any other procedure for dealing with esophageal atresia after having seen this favorable result following the method of Dr. Jopson, and yet there is one method which might be spoken of; that is, doing first an esophagostomy below the seat of stricture, then passing the finger up to the point of stricture, and with a blunt pointed bistoury incising it in several places. The tube then can be at once passed through the mouth into the stomach and left in position, or the treatment can be made directly through the esophageal opening. By this means it seems to me that much less treatment is called for, and consequently earlier recovery may be expected to take place. The necessity for mechanical means will be early removed, and I think would avoid leaving a prolapse such as we have in this case of the mucous lining of the stomach. I have operated on one case in the manner above outlined, and the results were very satisfactory indeed. This procedure could not be resorted to where the obstruction closely approached the cardiac end.

Dr. J. P. CROZER GRIFFITH.—I have watched this case with a great deal of interest. It was under my care in the Children's Hospital, having been brought to the out-patient department last June. I sent it to the wards and lost sight of it until this Winter, when it again came under treatment during my term in the wards. In attempting to drink water, she would sit with a bowl of ice in her lap, and every few minutes raise it and drink what water had melted, and then almost immediately

regurgitate all she had swallowed. It was pitiable, too, to see her wasting away. I tried repeatedly to get a sound into the stomach, but had no greater success than Dr. Wharton met with. Evidently the stricture was near the stomach, and could not have been reached by any operation upon the esophagus from the outside. The child regained some ability to swallow about a day before the operation, and after it seemed to learn to swallow pretty well. I was very anxious that there should have been some effort made at the time of the operation to dilate this stricture from below, because a permanent opening into the stomach is certainly not a thing greatly to be desired; but I know that Dr. Jopson's opinion of the child's condition was that it was not such as would warrant much interference at the time.

Dr. JOPSON closes.—In reference to Dr. Griffith's remarks upon the advisability of doing anything more at the time of the first operation, I am strongly of the opinion that it would not have been wise. The operation may seem simple, but it is attended with considerable risk in this class of cases. In a gastrostomy, done at the Children's Hospital by the Witzel method, the child died of shock within twenty-four hours. Again, in cicatricial strictures in children it is better to wait until a fistula is formed and then dilate, because these strictures are often multiple and the process of dilatation is liable to be tedious.

Dr. EMERY MARVEL read a paper entitled, **Hydronephrosis, Pyonephrosis; Nephrectomy** in boy $4\frac{1}{2}$ years old.

The patient, who had been in previous good health, was accidentally shot October 7, 1898. Three hundred and eighteen small bird-shot penetrated the back of the head, body, and legs, some of which perforated the thighs, leaving tracts of over three inches. These wounds were cleansed and dressed. The following day the urine was smoky red, alkaline, ropy, showing albumen and blood in large quantities. During the subsequent twelve days improvement was continuous, but the patient complained of frequent pain in the penis and right testicle. On October 19th twelve superficial shot were removed, one of which was taken from near the right spermatic cord. Three days later, while the boy was out playing,

a prominence was observed in the right lumbar region, which increased during the seven subsequent days. This was aspirated of 27. ounces of straw-colored, alkaline fluid in which albumen, bile, blood-cells, and phosphatic crystals were found. The urine contained neither albumen nor blood.

The day following aspiration, the prominence began to recur, and rapidly increased for three days, when fear of rupture was apprehended. At this time a lumbar incision was made, liberating over a half gallon of fluid. Failing to secure the kidney, the removal of which was projected, the wound was closed, leaving a tube for drainage. Patient's condition gave no further alarm for nine days, when there was a rise of temperature ranging from normal to 104° F. This became normal December 1st and remained so for two weeks, when it abruptly jumped to 106° F., followed by great irregularity until time of subsequent operation.

December 22d a lumbar incision was made, the kidney found, brought out, vessels and urether ligated, and the organ removed. Upon section of the ureter much pus appeared. The kidney was enlarged, measuring along the greater curvature 16 c.m., lesser curvature 10 c.m., breadth 5½ c.m., and width 5 c.m. It also showed several wounds where shot had perforated the organ.

With the exception of failure in respiration after operation due to ether narcosis, the recovery was uninterrupted, patient being discharged from hospital January 15th, twenty-three days after operation. March 12th seventeen ounces of urine were passed during twenty-four hours, and albumen and other abnormal constituents were absent. The boy is now stouter and heavier than ever and suffers no inconvenience.

Dr. J. H. JOPSON.—I think that the ureter itself was injured and probably secondarily occluded. That there was an injury of the kidney or ureter was proven by the presence of hematuria, and the slow formation of a cystic tumor in the loin, after such an injury as this boy received, would also point to the same conclusion. A tumor forming immediately after the accident would probably indicate a peri-renal hemorrhage, whereas a swelling due to a peri-renal collection of urine would not appear immediately, but as a result of gradual leakage, and this, I think, was what happened here. A tumor appear-

ing in the loin, a considerable time subsequent to any injury would lead one to suspect a stricture of the ureter, with consequent dilation of the kidney and hydronephrosis, as Morris points out in his Hunterian lectures. In this case there was no dilation of the kidney, and I should interpret the condition as one of the peri-renal extravasation of urine, the result of a wound of the ureter. If the perforation of the ureter could not be found, and if there resulted a persistent urinary fistula, nephrectomy might be justifiable, and it would certainly be indicated if, as often happens, infection of the fistula and kidney takes place, an accident which is often unavoidable, and which apparently occurred in this case.

Dr. L. J. HAMMOND.—In reference to the diagnosis, if it had been peri-renal inflammation, I think one of the most conspicuous, as well as earliest, symptoms would have been marked flexion of the thigh upon the abdomen, due to the irritation of the lumbar, psoas, and iliac muscles.

Dr. MARVEL closes.—I am glad to hear Dr. Jopson regarding the possibility of peri-renal abscess. That appealed to me as being more than probable at first, but after having cut through the abdominal walls there was no evidence of involvement of the peri-renal tissues. There never was any marked flexion of the thigh, and the boy was able to walk even when the tumor was largest.

Dr. J. P. CROZER GRIFFITH exhibited a case of **Double Hare-lip and Cleft Palate**, with the intermaxillary bone attached only to the bones of the nose.

Dr. J. H. JOPSON.—Dr. Ashhurst has been waiting for the child to convalesce from bronchitis, to which affection these children are very reliable. The pre-maxillary bone in this case is attached by such a slender pedicle that it will have to be cut away, and the skin covering it can be used to form a columella from the nose. There will be some trouble also in bringing together the sides of the lip owing to width of the gap. After that the matter of closing the hard and soft palate will have to be left until the child is a few years older.

Dr. ALLEN.—Some months ago I saw a child with cleft

palate without the complication of hare-lip. I learned upon inquiring into the family history that a sister of the child's mother had had cleft palate, and in a brother of the mother I noticed a cleft uvula, with probably a cleft hard palate. This is an interesting instance of hereditary transmission of the deformity.

Dr. THOMPSON S. WESTCOTT reported a case of **Acetanilid Poisoning** in a female infant, 4 months of age, the child of a brother practitioner. She was a fat, well-developed baby, nursed entirely upon the breast; and during the hot weather of last summer she perspired freely and became chafed in the folds of the groins and the creases of the thighs, a mild eczematous condition existing in a small portion of the areas affected. For this the father had ordered a dusting powder of pure acetanilid. Three hours after the drug was applied the whole surface of the body showed a peculiar grayish pallor, and the lips were bluish, though the surface temperature was not thought by the mother to be lower than usual. The cyanosis increased for an hour and a half, the face became pinched and drawn in appearance, and the baby was in a profound slumber, from which she could not easily be aroused. When the father first saw her, four or five hours after signs of poison were first noticed, the cardiac action and respiration were not appreciably disturbed. The remains of the powder were not removed till this time. Recovery gradually ensued without any more active treatment than small doses of whiskey once or twice repeated. In this case the actual amount of surface capable of directly absorbing the drug was very small, and in no way comparable to the area of surface exposed in other cases so far recorded. The report concluded by deprecating the free use of so dangerous a drug under any conditions in young children, and considered that the existence of any break in the surface should demand the greatest caution in its use, if indeed this should not be judged a positive contraindication.

Dr. ALFRED HAND, JR.—When I was on duty as resident in the German Hospital, we used acetanilid rather extensively. I recall a case of a man with an extensive laceration of the arm from the wrist almost to the shoulder. I sprinkled ace-

tanilid on the surface, making no estimate of the amount used, and in a very short time I had the man very cyanotic, which condition disappeared with the cessation of the use of the acetanilid. I also saw a case of poisoning in a child in which a 10 per cent. ointment had been prescribed for a case of eczema. Through a mistake, more of the ointment was used than had been intended, and four ounces had been applied within twenty-four hours. The child went into profound collapse, with very weak pulse. Removal of the ointment and stimulation brought about recovery. Since then I have, as Dr. Westcott suggests, avoided using it on raw surfaces. Acetanilid being soluble in alkaline fluid, the alkaline juices of the body would take it up very readily.

Dr. BRANSON.—I am reminded of a case seen during my service in the Pennsylvania Hospital, in a man who was under the care of Dr. T. S. K. Morton. About 2 drams of the powdered drug were used, and in a few hours the man became very cyanotic, the pupils were dilated, and he developed a very peculiar happy delirium, which kept up for about three hours and a half. He sang very loudly, and was extremely happy. The pulse and respirations were not particularly affected.

Dr. WESTCOTT.—I think, as I have said, that it is a dangerous drug to use with young children, and that there are many other antiseptic dessicant applications which could be employed with absolute safety, such as the stearates. In this case the amount of raw surface was very small, in fact, nothing more than the intertrigo so frequently produced in the folds of the skin by hot weather. It is quite likely that absorption was favored by the moist condition of the skin, and that thus the general surface took some part in the absorptive process.

Dr. ALFRED HAND., Jr., exhibited specimens of kidneys taken from the body of a girl of 12 years.

CORRECTION.

In PEDIATRICS for May 15th (p. 470), the title of Dr. L. J. Hammond's paper in the report of proceedings of the Philadelphia Pediatric Society should be changed by substituting the word "cerebellar" for "cerebral." The full title of the paper is "Remarks on the Diagnosis of Cerebellar Abscess in Children, with a Record of Five Cases."

PRACTICAL NOTES

Tannate of Orexin has been used by Bodenstein in the anorexia of anemia, chlorosis, scrofulosis, convalescence from fevers, etc., with excellent results, and often after the usual methods for rousing the appetite had proved inefficacious. The drug is readily taken by children in the form of chocolate tablets.—*Wein. med. Presse*, 1898, No. 26.

An Interesting Case of Intermittent Fever in a child 2 months old has been reported by KALNIJKOW. The leading symptoms were fever and convulsions, the initial symptom consisting of colic. The clonic spasms appeared daily, but not always at the same hour, and during the attacks the specific plasmodium was invariably present. There was no tumor of the spleen. The patient soon recovered after removal to a non-paludic region. Arsenic was also administered subcutaneously.—*Djetskaja Medicina*, 1897, No. 4.

A Round-Cell Sarcoma of the Ovary of the size of a man's head was removed from a 13-year-old girl by RÖHRIG. The tumor was of rapid growth. There were no metastases. A moderate degree of ascites co-existed.—*Biol. Abtheil. d. Aerztl. Vereins, Hamburg*, June 21, 1898.

A Case of Generalized Vaccination was presented before the Berlin Medical Society by WETTERER. The child at the time of its vaccination had a small patch of eczema upon its face, but was otherwise perfectly healthy. Three or four days later an exanthem developed on the face and arms of the child (whose age was but 10 weeks), accompanied by fever. The eruption, which had all the characters of the specific vaccine pustule, involved the entire face, and was believed to have been spread by auto-inoculation. Cases like this one are supposed to furnish an argument against vaccinating children who already have an eruption somewhere upon the skin.

A Case of Retropharyngeal Abscess, with unusual complications, is described by FRANKLIN. The patient, a 7-weeks old child, suddenly collapsed with hemorrhage from nose and

mouth, the blood apparently coming from the vicinity of the left tonsil. After a rally the child was seized with aphasia and right motor and sensory anesthesia, which soon passed away, leaving paresis of the arm, with the foot in an equino-varus position. From the analogy of a similar case, in which an autopsy was held, Franklin concludes that a retropharyngeal abscess must have broken into the internal carotid artery, with secondary embolus into the left hemisphere.—(*Medical News*, Feb. 19, 1898).

Squills in Pediatrics.—COMBY states that this drug is a useful diuretic, especially in increased venous with decreased arterial pressure, subcutaneous edema, effusion into serous cavities, etc.—under which circumstances it is superior to digitalis because non-cumulative—and is further of value as an anticatarrhal, expectorating medicine, and respiratory sedative. It is best given in the form of powder, in doses of 1 centigram per day for each year of life. A 5-year-old child would receive 5 centigrams a day, in doses of 1 centigram, repeated every two hours. Comby administers the powdered drug in 10 per cent. mixture with sugar of milk. In affections of the trachea and lungs it may be advantageously combined with sulphur. The tincture or vinegar, dose two drops daily for each year, may also be administered, while Comby gives the oxymel to a 5-year-old child, as follows: $\mathcal{R}$. oxymel scilla, 10 c.c.; aq. destill., 40 c.c.; syr. simp., 10 c.c.; tinct. belladonna, gtts. x. M. S.—Child's spoonful every two hours.—*La Méd. Moderne*, 1898, No. 48.

Dyspeptic Troubles.—Excluding the purely functional dyspeptic trouble, BAGINSKY distinguishes two forms of infantile diarrhea, the catarrhal (the type of which is cholera infantum) and the real enteric or follicular (the type of which is dysentery).—*Arch. f. Kinderheilkunde*, xxii., H. 3-6.

Mortality of Nurslings from Cholera Infantum During the Summer Months.—Koenigsberger found that in 148 fatal cases a previous gastro-enteric disturbance was absent only five times. He concludes that the high rate of mortality is not due to the disease occurring only in Summer, but because it attacks almost exclusively artificially fed infants with chronic

gastro-intestinal disease. A reduction of the death rate can only be accomplished by preventing digestive disorders by means of good feeding.—*Jahrbuch f. Kinderh.*, vol. *xlvi.*, Nos. 2 and 3.

Summer Diarrhea of Children.—Astringents which were formerly so exclusively used have very properly been relegated to the waste-dump as useless. 1, Summer diarrhea is caused largely by improper and unclean feeding, and is usually preventable; 2, bacteria plays a very important part in the development; 3, hot weather has only to do in an indirect manner, as it promotes the growth and development of bacteria in the food supply; 4, treatment consists first in eliminating all decomposing food from the bowels by cathartic lavage and colonic irrigation; 5, drugs judiciously administered are of great value, but are secondary in importance to prevention and management.—Dr. RARDIN, *Cincinnati Lancet Clinic*.

Opium in Diarrhea of Young Children.—It is contraindicated—1, in the first stage of acute diarrhea before the intestinal canal has been freed from decomposing matter; 2, where the passages are infrequent and of bad odor; 3, when there is a high temperature or cerebral symptoms are present; 4, when its use is followed by elevation of temperature or the passages become more offensive. It is indicated—1, when the passages are frequent, with pain; 2, when the passages are large and watery; 3, in dysenteric diarrhea, together with castor oil or a saline; 4, in later stages with small, frequent, and nagging passages; 5, when the passages consist largely of undigested food, and the bowels act as soon as food is taken into them.—CRANDALL.

Cholera Infantum.—H. N. POTTER says that with a recorded mortality of over 90 per cent. in this disease the past treatment would seem to be far from satisfactory. He recommends a treatment in which he has great faith, but which he has not had the opportunity to thoroughly test on account of the prejudice against new treatments. 1, take away all food for twenty-four hours; 2, clear out the intestinal tract with hydrargyrum chloridum mite; 3, give large quantities of an intestinal antiseptic solution, which, of course, must be weak. The

quantity given should be enough to keep the stomach well filled. If it cannot be given by the mouth, that is, if the child cannot be made to swallow it in such quantities, a tube should be used and the solution poured into the stomach. With this the intestinal tract should be irrigated with same solution, being thrown well up. To do this a No. 10 or 12 soft rubber catheter should be attached to a fountain syringe. The idea is to thoroughly fill the alimentary tract with the solution; 4, if the patient should need stimulants hypodermatic injections of brandy or strychnine should be given, and if the stomach rejects the treatment or there is persistent vomiting, the irrigation of the intestinal tract should be kept up and the stomach allowed a rest for a short time and then the treatment again resorted to. If there is severe pain, external applications should be used, or, if necessary, hypodermatic injections of therapeutic agents that are not constipating given. With the experience that he already has had with the removal of food and the administration of antiseptic solutions alone and in extreme doses, which is as near as he could come to the treatment, he is of the opinion that his treatment rigidly enforced will show more beneficial results than any treatment used heretofore.—*American Journal of Obstetrics and Diseases of Women and Children.*



ABSTRACTS

AN IMPROVED METHOD OF VACCINATION.

EDWARD SPEIDEL (*Louisville Journal of Surgery and Medicine*, May, 1899) says that in the last two months, following a visitation of small-pox, vaccination has become more or less general throughout this city, and as a result there have been frequent complaints of very sore arms. Laborers have been compelled to leave work for several days. One of the woolen mills of this city was compelled to shut down for a time because so many of the girls were disabled by vaccination. Reports of some persons having lost an arm were circulated in the city, and a death in one of the suburbs was said to have followed upon a vaccination. In view of such an amount of discomfort and suffering, should it not occur to the progressive physician whether or not it should follow such a simple operation as an ordinary vaccination. The laity and many physicians when shown such an arm, swollen and highly inflamed from the shoulder to the elbow, and sometimes even to the finger tips, are wont to exclaim that the vaccination took splendidly. Is such an opinion in conformity with our advanced ideas upon other inoculations? If an abscess follows upon an injection of diphtheria antitoxin, does the physician congratulate himself upon the magnificent result of his injection? In the use of all other antitoxins, and vaccine, virus surely must be classed as such, is there such an utter disregard of even the ordinary rules of cleanliness, to say nothing of surgical asepsis? Is it not a well-known fact that men have been vaccinated in factories and girls in work-rooms without even a preliminary cleansing of the skin, and the poisoned wound made by the vaccination laid bare to catch the dirt and dust as they continue their work? Is it not time for physicians to learn that under such circumstances the intense inflammation following is the result of a mixed infection?

When vaccine virus is inserted under the skin under ideal conditions the result should be a vesicle, whose contents become purulent in eight to ten days, followed by umbilication and dessication with the formation of the scab and final cicatrix; there should be no infiltration of the surrounding tissues. With the glycerinated virus of Parke, Davis & Co. and Mulford & Co. and the observance of only ordinary care, such an ideal result is attainable in the majority of vaccinations.

The writer has vaccinated more than 200 individuals in the last two months, persons from all walks of life, inmates of two large institutes, inmates of Children's Hospital, medical students who were attending the dissecting-room at the time, and workmen who remained at their positions. In most of the cases the results were ideal, and in only a few did slight inflammation follow, relieved and prevented from further spreading by the care taken of them at once.

The method of vaccinating used by the writer requires no expensive paraphernalia, is not tedious or cumbersome, and all articles necessary can be carried in a small box and kept about the person ready for immediate use.

With the addition of soap and water, the only articles necessary are a vaccination stylet, a roll of one-inch rubber adhesive plaster, rubber tissues well washed with soap and water and kept between folds of tissue paper, some thick, oval bunion plasters, ichthyol-collodion, camel's-hair pencil, and a bandage.

The *modus operandi* consists in washing a space on the arm thoroughly with soap and water, rinsing with clean water, and drying with a fresh, clean towel. No alcohol, ether, or other antiseptics should be used, as if any of such substances remain upon the skin they may destroy the vaccine virus.

The operator washes his hands and cleans his stylet and denudes a small area on the cleansed skin, applies the glycerinated virus, and promotes absorption by rubbing it into the denuded tissue with his instrument. The adhesive surface of the thick bunion plaster is moistened with water and the plaster placed so that the vaccination fits into the hole in the plaster. A strip of the rubber adhesive plaster, long enough to encircle the arm, is then taken; upon the middle of the adhesive side is pressed a piece, a square inch in size, of the cleansed rubber tissue, dull side downward. The strip of adhesive plaster is then placed around the arm, the part carrying the little square rubber tissue fitting over the hole in the bunion plaster. The strip of rubber tissue prevents the adhesive surface of the rubber plaster from coming in contact with the vaccination, as occurred in several instances before this precaution was taken. In this way the vaccination is protected from contamination, injury, and the friction of the clothing, and generally proceeds undisturbed to the end. The patient is told to report back in eight or ten days, or at any time before, if an area of redness shows itself above or below the rubber bunion plaster. If any inflammation shows itself, the rubber adhesive strip and bunion plaster are removed, the inflamed surface cleansed with turpentine, and the area painted with ichthyol-collodion made according to the following formula:

R̄ Ichthyol.....	3i
Ether Sulph.....	3i
Collod. flexile.....	3i

Begin by painting the healthy skin beyond the inflamed region, and then coming to the center. When dry, a gauze bandage is wrapped around the arm several times to prevent friction of the clothing.

This method is not advised as an ideal aseptic means of vaccinating, but as an improvement upon the crude method now in use, and as a means to prevent much unnecessary suffering.

VACCINAL IMMUNITY.

MM. BECLERE CAMBON and MENAND (*Ann. de l'Inst. Pasteur, Paris, Dec., 1898, and Feb., 1899*) continue their investigations on this subject. They had already shown that the blood serum of a heifer vaccinated ten to fifteen days previously had a certain protective power against vaccina-

tion. If a heifer get a hypodermic injection of this serum immediately before inoculation with vaccine lymph, the characteristic eruption is not produced, nor is there any vaccinal virulence in the pustules that are formed. On the other hand, the injection of vaccine lymph must be made eight days before vaccination to have any immunizing effect. In their later communications that show that among heifers eleven or twelve days must elapse between injection with vaccine lymph and vaccination, to insure the *entire* disappearance of virulence from the vaccine, as determined by the non-production of a pustular eruption when it is used for vaccinating another animal. The immunizing properties of the serum is not, therefore, due to the presence of living organisms, but to some chemical substance contained in it. Their method of investigation is as follows: Two test-tubes, each containing a few cc. of active vaccine lymph, are taken, and to the one is added the serum of the blood taken before vaccination, and to the other of that taken after vaccination. After forty-eight hours the serum is as carefully as possible pipetted off, and each of the samples of lymph used for vaccinating the same animal on different sides of the abdomen. The first of these gives the typical vesicles containing active lymph, while the second either shows no reaction, or only a slight inflammation, giving a little dried pus. Experiments on horses give similar results. As regards the human subject, nineteen persons were experimented on. One case, that of a woman, 44 years of age, who had been vaccinated in infancy, but not revaccinated, may be taken. Twenty cc. of blood was drawn from the arm, and three days later she was vaccinated, the eruption being a typical one. Thirty-two days later another 20 cc. of blood was drawn. The action of the two sera was tested as above described. The first had no anti-virulent action, showing that the effect of the vaccination had entirely disappeared; the second removed all virulence from the vaccine lymph. Similar results were got in three cases convalescent from small-pox. In one of these, which ran a usual course, and ended in recovery, the serum of blood drawn twenty days after the appearance of the eruption was strongly anti-virulent. The blood is anti-virulent, as a rule, on the twelfth day after vaccination. In small-pox cases the time varied. In some cases it was present, though not well marked, on sixth to eleventh day after appearance of eruption; in others extremely well marked in twentieth to twenty-seventh day. Immunity against vaccinal or variolar infection continues after the disappearance of the anti-virulence from the blood. The time of disappearance of the anti-virulence varies. They found it present for twenty-five and even fifty years after vaccination or small-pox. The active part of the serum is evidently a globulin. Its power is not lost by the action of heat, light, or filtration through porcelain.

KLEBS-LÖEFFLER DIPHTHERIA OF THE NAVEL IN THE NEW-BORN.

GERTLER (*Klin.-therap. Wochenschrift*, 1898, Bd. V., p. 1236) was led by the failure of Monti to heal erysepelas umbilici neonatorum with

anti-streptococcus serum to investigate similar cases bacteriologically whenever encountered in practice.

One child had lesions of both navel and penis, following ritual circumcision. The cord had persisted up to the day of circumcision, and was severed by the physician just before the performance of the latter ceremony.

Gertler saw the patient three weeks after the operation. The umbilical region presented a sharply-defined redness, with inflammation of the cellular tissue as far as the symphysis. Immediately about the navel there was a grayish-yellow deposit, and a purulent fluid could be squeezed from the same locality.

The penis was swollen, with a shallow ulcer to the right of the glans, having a grayish-yellow, diphtheroid coating. Bilateral inguinal and right axillary adenopathy was present. The general condition good.

Klebs-Löffler bacilli in pure culture were obtained from the navel, and it was taken for granted that the lesion of the penis was of the same nature. Antitoxin was injected, with rapid and decided improvement, leading to perfect recovery within three or four days.

Before Gertler had seen the case, ordinary antiseptic management had completely failed to arrest the progress of the disease. Children of this age (1 month) are believed to be largely immune to pharyngeal diphtheria of the Klebs-Löffler species, but some authorities have found a much less degree of immunity during the first three months than between the third and tenth months. The author, in concluding, states his belief that the foregoing is the first recorded case of Klebs-Löffler diphtheria of the navel in the new-born.

ON RUPTURE OF THE INTESTINE IN THE NEW-BORN.

CIECHANOWSKI (*Przegląd lekarski*, 1897, No. 23; *Centralbl. f. Kinderheilh.*, 1898, iii., p. 300), reports the case of a child who died with peritonitis at the age of 4 days. Autopsy revealed an oval opening (1 cm. by 3-4 cm.) in the transverse colon near the splenic flexure at a spot where the gut was kinked by reason of a very short mesentery. The rupture was seated at the apex of the angle formed by the bent intestine, and the mucosa was prolapsed through the breach and firmly adherent to the peritoneum. The portion of the large intestine between the seat of rupture and the cecum was distended with fluid meconium.

Ciechanowski states that in most cases of intestinal rupture in the new-born the vis a tergo of the meconium is arrested by the kinked intestine which gives way at its weakest point; the serosa ruptures first, and is followed in turn by the muscular and mucous coats in the order named. In some cases the perforation is due to necrosis following direct injury of the intestine from without by pressure, etc. In the case under consideration there was no evidence of trauma during labor, the latter having been of unusually short duration unaccompanied by interference of any sort. On the other hand, the very precipitancy of the labor and

intensity of the expulsive efforts of the uterus may have so affected the intra-abdominal pressure of the child as to contribute to the production of the rupture.

ON GENERAL AND LOCAL BLOOD-LETTING IN PEDIATRICS.

BAGINSKY (*Berlin klin. Wochenschrift*, 1898, xxxv., p. 457), reports a case in pediatric practice in which venesection undoubtedly saved life. The patient, a 7-year-old girl, with acute lobular pneumonia (complicating measles) was almost at the lethal point from exhaustion accompanying dyspnea. The child was cyanotic and pulseless, with loud tracheal râles. As depletion could not be effected by venesection, the left radial artery was opened and 80 c.c. blood were abstracted. Cyanosis and dyspnea were relieved and the pulse returned, with a general rally. The further history of the case was uneventful. In this case the abstraction of blood relieved the acute dilatation of the heart. Venesection under these circumstances is comparable in its results with the operations of tracheotomy and intubation. Baginsky also reports similar cases of life-saving in connection with venesection, performed in heart disease with disturbance of compensation and in dyspneic crisis associated with bronchoectasis and suffocative asthma. At the same time cases may be met in which blood-letting may fill the mechanical indication and the patient may nevertheless die of toxemia.

With regard to local blood-letting in children, Baginsky knows of but two conditions in which it is indicated, viz.: simple convulsions and uremic eclampsia. The indication is filled by the use of leeches. Simple convulsions usually yield to simple remedies, such as warm baths with affusions, bromides, chloral, chloroform, ice, etc.; at times, however, all these remedies fail. In the course of numerous autopsies performed on children who have died with convulsions, Baginsky has found marked active or passive congestion of the brain; and he therefore feels justified, whenever ordinary measures fail, in employing this mechanical measure. This reasoning applies with even greater force to uremic convulsions, for in nephritis the arterial pressure is raised and the blood hydremic and loaded with toxic material. In cases of this sort, leeches to the head are often productive of strikingly beneficial results. Baginsky relates the example of a child with deep uremic coma and Cheyne-Stokes breathing, cyanosis, no pulse, etc., with fearful convulsions, in which six leeches to the head first produced cessation of the convulsions and later return of consciousness and ultimate recovery.

ADDISON'S DISEASE IN CHILDREN.

DEGIROT (*Klin.-therap. Wochenschrift*, 1898, v., 1320) has collected notes of forty-eight cases of morbus Addisonii in children, and has had opportunity to personally study three cases. In nearly every instance the initial lesion was furnished by tuberculous infection of the suprarenal

capsule. The onset of the disease was often insidious, but, as a rule, gastro-intestinal symptoms (nausea, vomiting, diarrhea, etc.) heralded the invasion of the affection. Naturally other manifestations of tubercular disease often co-exist—affections of the lungs, bones, lymphatics, etc. In a few cases the disease ran a fulminating course, and attained its full development within a few months. As a rule, the discoloration of the skin does not appear until the disease is somewhat advanced.

The most constant symptom, which is hardly ever absent, is the weakness, which amounts almost to prostration. This symptom is not, as a rule, associated with emaciation or anemia.

Next to asthenia, the gastro-intestinal symptoms are important as an aid to the recognition of the disease. They appear to be due to auto-intoxication, and remind the observer of the analogous symptoms of uremia. Anorexia is followed by nausea and vomiting, with diarrhea, (occasionally constipation). At times there is pain in the back or abdomen, perhaps associated with a high degree of hyperesthesia; so that peritonitis has been simulated.

The discoloration may be overlooked or confounded with other dyschromatous conditions, such as jaundice. As a rule, the pigmentation is total, but parts exposed to the air or by nature, containing relative excess of pigment, are darker than other regions of the surface. Regions which have been subject to pressure also show a more extensive degree of pigmentation. It thus follows that the face, neck, hands, nipples, axilla, genitals, and the surfaces which have been compressed habitually by belts, garters, and similar garments are considerably darker than the greater part of the surface of the trunk, limbs, and seat. The hair often becomes darker. The conjunctiva and nails usually escape, but, in general, the mucous membranes show pigmentation in spots—a pathognomonic symptom when present.

The disease may, in some cases, exhibit spontaneous remissions; even the pigment has been known to disappear—but this improvement is rather a bad prognostic, as the symptoms soon return with added severity. Statistics show that two out of every three cases die within the first year of the disease, the course being more malignant in childhood. Of treatment other than palliative, there is little enough to be said. There may have been one recovery under the use of suprarenal extract.

A CASE OF EPILEPSY, FOLLOWING LONG-CONTINUED DOUCHING OF THE HEAD.

M. BREITUNG (*Deutsche Medicinische Wochenschrift*, 1898, xxix., 39), A boy, 10 years of age, on a hot afternoon in July, 1894, ran quite some distance to take a douche. He remained at least a quarter of an hour under the stream of water. When he arrived at home, his parents noticed an unusual excitement in his manner. During the night he was also very restless, and on the following morning, suddenly, and without any reason, an attack consisting of jactations, unconsciousness, etc., came on, which

lasted some time, and was pronounced an epileptic fit by the physician. From this time on the convulsions repeated six or eight times within the year, lasting about five minutes, and presenting a distinct aura, consisting of a feeling of sexual impulse and jactitation, which proceeded upward from the left hand; the boy had no hereditary taint whatever, and was, up to the occurrence of the first attack, in perfect health. An objective examination of the 16-year old patient in April of this year gave the following noteworthy results:

The pupils are dilated, and only slowly react to light; hearing on the left side for music tone and conversation is diminished; the point of the tongue deviates to the right. Intelligence is somewhat lessened.

There is no doubt in Breitung's mind that the protracted douche directly on the skull of the heated child, is to be looked upon as a traumatism causing the epilepsy. The opening of the pipe in douches for the head should, moreover, always be oblique, so that the stream of water comes in contact with the skin at an obtuse angle, and persons should only use these douches in such a manner that not the skull, but only the upper portion of the back or chest are exposed to the falling stream.

BOLOGNINI'S SIGN OF MEASLES.

A. KÖPPEN (*Centralbl. f. innere Medicin*, 1898, xix., 673) states that Bolognini observed a peculiar symptom during an extensive measles epidemic in 1893. If the patient was laid on the back and the legs flexed so as to overcome the tension of the abdominal muscles, and both hands were laid on the abdomen, alternately lightly pressing the tips of the three middle fingers to the right and left side, gradually exerting pressure on the abdominal wall, he experienced the sensation of slight friction as though two rough surfaces were moved on each other under his fingers. Sometimes this locality was altogether circumscribed, again the whole anterior abdominal wall presented this phenomenon. When too great a pressure was made this friction would frequently disappear, as also when long observed.

He only found it absent in 2 out of 200 examinations. This symptom proved to be one of the very earliest prodromal symptoms, and may be even demonstrated before the appearance of the exanthem on the mucous membrane of the pharynx. Its duration was various, as a rule, keeping step with the exanthem of the skin. At no time were any peritoneal symptoms conjoined with it. The cause of this symptom, according to Bolognini, is probably a slight exanthem of the peritoneum, which never leads to serious symptoms of inflammation or irritation, but is a positive diagnostic sign. In 120 school children the symptom was absent, excepting in a few who had only recently recovered from measles.

Köppen has experimented along this line also in an epidemic which ran its course during the past Winter, making 343 examinations in 316 children. One hundred and fifty-four of these gave positive results. He did not feel any friction sensation, it is true, but a crepitation, as in em-

physema of the integument. That what he felt under the finger was air, he could frequently convince himself, when he allowed the finger quietly to remain in position for a little while; the fine crepitation gradually became coarser, a movement as of bubbles rising could be felt, and finally a daily intestinal sound was heard.

Bolognini's explanation of this symptom was from the beginning unsatisfactory. Why should a friction sound be produced from an exanthem on pressure upon the abdominal wall, why did this phenomenon continue from the prodromal stage up to the time of perfect convalescence? It is the intestine and its contents that cause this crepitation. Köppen, in fact, found, even, on superficial examination, that some of these patients suffered with diarrhea, which was, as a rule, "foamy" or "spongy," according to the friends of the patient. These abnormal intestinal contents more or less fluid, and mixed with finely divided air, were the source of Bolognini's symptom.

Frequently enough the examination resulted negatively, it is true. This diarrhea, which, as a rule, occurred already before the exanthem appeared and generally disappeared afterwards, did not in all cases contain air, furthermore the symptom was recognized also during normal stools, while it was occasionally absent in "foamy" diarrhea. This was all due to some cause. In many children of tenderest age relaxation of the abdominal muscles could not easily be obtained, and Köppen desisted from his examination. Furthermore he was, as a rule, only able to make the examination on the day of the appearance of the exanthem and often later, whereby many examinations became negative, and also many cases of diarrhea escaped observation which usually belonged to the initial symptoms. For the rest the facts were these, that the contents of the intestine were also characteristic in the beginnings; that, however, the gases and water had already been absorbed, thus depriving the movements of anything specific.

In healthy children this symptom is not met with by Köppen, but in individual cases with a morbid intestine it was. Bolognini may therefore be correct in having found this symptom frequently in measles; it is, however, not pathognomic of this disease, as it is due to the intestinal contents which are here usually changed. The cause of the peculiar intestinal catarrh it is not Köppen's intention to discuss.

A RARE COMPLICATION OF MEASLES.

V. STARCK (*Jahrb. f. Kinderheilk*, 1898, *xlvi*., 2-3) states that a girl 8 years old became ill October 8, 1897, with cough, coryza, photophobia. October 11th she came after treatment. Condition: A slender, pretty much emaciated child. The face and trunk are densely covered with a measles-rash. There is great conjunctivitis and rhinitis. Sub-crepitant râles over the posterior portion of the lungs below. Temperature is high; pulse very rapid.

October 12th.—The exanthem has extended over the whole body. High fever; somewhat stupid.

October 13th.—The exanthem is unchanged. General condition not satisfactory. Complains of violent pains in the back, which radiate to the legs and anteriorly into the chest. Head clear. Temperature 39.8°.

October 14th.—The eruption is beginning to pale. Temperature, however, is 40°. The patient gives the impression of a very sick person. Condition of lungs: large râles are heard posteriorly below. The tenderness of the spinal column has increased, so that the patient guards against all movements, and carries out all changes in the thorax and legs which are ordered very carefully and with tears. When passive movements of the arms or legs are made, violent pain results from muscular spasm; even a slight touch on the arms and legs is painful. No stiffness of the neck present. The rest of the spinal column is sensitive to pressure at every joint, and is held stiff. Temperature, evening, 40.1°. During the preceding night and during the following day there have been repeatedly painful desires to urinate; no urine passed, however; the catheter removed about 600 cm. of clear urine, free from albumin.

October 15th, noon.—The eruption has disappeared altogether. Temperature 40°, otherwise no change. Urinary retention is still present; the catheter must be used. Head clear. Evening temperature, normal. Catheterization. As no passage was had for three days, a dose of castor oil was administered.

October 16th.—No fever, otherwise unchanged. The patient passed a stool in bed, carefully avoids all motion. A pencil passed over the legs produces pain. Tendon as well as skin reflex greatly increased in the legs, less so in the arms. On movement painful spasms occur, especially in the legs; the spinal column is tender, is easily flexed, the muscles of the neck becoming tense. Nerves of the head are intact.

October 17th.—The patient has for the first time slept quietly (formerly she moaned and cried); this morning the bladder was for the first time emptied spontaneously, accompanied by pain, however, and slowly. During the day the patient sleeps, slight spasms are still present. The arms are free. Temperature normal.

October 18th.—Voiding of the urine is still painful. The patient attempted to leave the bed, and slowly crawls along the bed; the legs being nearly wholly extended, the feet shuffle along the floor. The muscles of the legs are still painful to pressure; slight spasms.

During the following few days improvement continued.

On October 19th the patient is able again for the first time to walk a few steps, although slowly and with shuffling feet; slight stiffness of the muscles of the thigh.

October 27th.—General condition very satisfactory; the patient has recovered. The muscles of the legs still show slight stiffness and tenderness during active and passive motion. The tendon reflex is still exaggerated. On walking there is still some stiffness. Urination also is still somewhat painful. Bowels only move by artificial means. The patient recovered fully in a short time.

There were all the symptoms of meningitis spinalis and irritation of the nerve roots in this case, coming on in the second day of the florid stage of measles. No other cause but the latter could be determined; the

child had been previously perfectly healthy and had sustained no injury. Similar cases have been observed as sequelæ of scarlet and typhoid fevers, in measles they are of great rarity. The author did not feel justified in performing lumbar puncture in view of the rapid and favorable course of the disease.

THE PREDISPOSING AND ETIOLOGICAL FACTORS TO BE TAKEN INTO CONSIDERATION IN INFANTILE CEREBRAL PARALYSIS.

KÖENIG (*Neurol. Centralb.*, 1898, No. 11) differentiates between true etiological and predisposing factors, or (factors establishing a predisposition).

In the first he includes:

- 1.—Serious or asphyctic labor.
- 2.—Trauma capitis.
- 3.—Infectious diseases.

The latter are:

- 1.—Psychoneurotic heredity,
- 2.—Progressive phthisis.
- 3.—Alcoholism of the father.
- 4.—Progressive lues.
- 5.—Blood relationship of the parents.
- 6.—Somatic or psychic trauma matris in graviditate.
- 7.—Premature birth.
- 8.—Primogeniture.
- 9.—Birth out of wedlock.

10.—Under certain conditions a late or last child of a long series of generations.

11.—Congenital idiocy.

12.—Epileptic seizures, which antedate the paralysis for some time.

13.—Children weakly from birth.

14.—The death of numerous sisters and brothers in early life, or more or less suspicious abortions.

15.—Nervous diseases, phthisis, or scrofulosis in brothers and sisters.*

Of the etiological factors the first two may occasionally act the rôle of predisposing ones.

König's researches are based on 70 cases of true infantile cerebral paralysis, exclusive of those forms, which are intermediate between this and simple idiocy. Only in 17 cases was he able to demonstrate the etiology as above outlined; in 8 cases severe birth with asphyxia; in 5 cases traumatism of the head; in 5 infectious diseases. Thirteen of these cases presented predisposing factors, and in nearly all cases, where no etiology could be traced, at least one, more often more factors of this kind could be demonstrated. In 42 cases out of these 70 the birth took a normal course; in 8 the course of birth was not known, and the rest of the

* Factors showing a predisposition.

cases were premature births, difficult or asphyctic births. In four cases the influence of the latter factor could not be traced; in one case it acted as a predisposing cause, in so far as it led to congenital idiocy which was complicated with the paralysis two years later, and in two cases the asphyctic birth exerted undoubtedly no influence, whatever. In 19 cases we were dealing with first births. The maximum of paralysis was met with during the first three years of life.

König gives the following resumé.

1. We are only acquainted with three etiological factors for infantile cerebral paralysis: the difficult or asphyctic birth; traumatism of the head; infectious diseases.

2. All other factors to be considered can only be looked upon, in the present state of our knowledge, as predisposing or proving a disposition, which does not, however, exclude the possibility that occasionally one or the other may also be active in an etiological sense.

3. The difficult or asphyctic birth may, under certain conditions, play the rôle of a predisposing factor, so also a traumatism of the head.

4. In cases also under etiology we very frequently meet with predisposing factors.

5. In the majority of all cases where a distinct history could be obtained we are able to demonstrate some predisposing factors.

6. We are not at present willing to assign to traumatic infantile cerebral paralysis a position by itself.

7. Psycho-neurotic heredity, as well as parental alcoholism, take a quite prominent position among predisposing factors.

8. Of still greater importance is the presence of a family cachexia.

9. Phthisis, in its progressive form, seems to possess a certain predisposing influence.

10. Syphilis in its florid form can only be assigned a subordinate influence.

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